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# University of the State of New York

## 104TH ANNUAL REPORT

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TRANSMITTED TO THE LEGISLATURE JANUARY 30, 1894

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ALBANY

JAMES B. LYON, STATE PRINTER

1892





University of the State of New York

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104TH ANNUAL REPORT

OF THE

REGENTS

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IN 3 VOLUMES

- 1 REPORT, BULLETINS, LEGISLATION, CONVOCATION PROCEEDINGS
- 2 UNIVERSITIES, COLLEGES, PROFESSIONAL AND TECHNICAL SCHOOLS
- 3 ACADEMIES, HIGH SCHOOLS AND ACADEMIC DEPARTMENTS

Volume 2

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TRANSMITTED TO THE LEGISLATURE JANUARY 30, 1894

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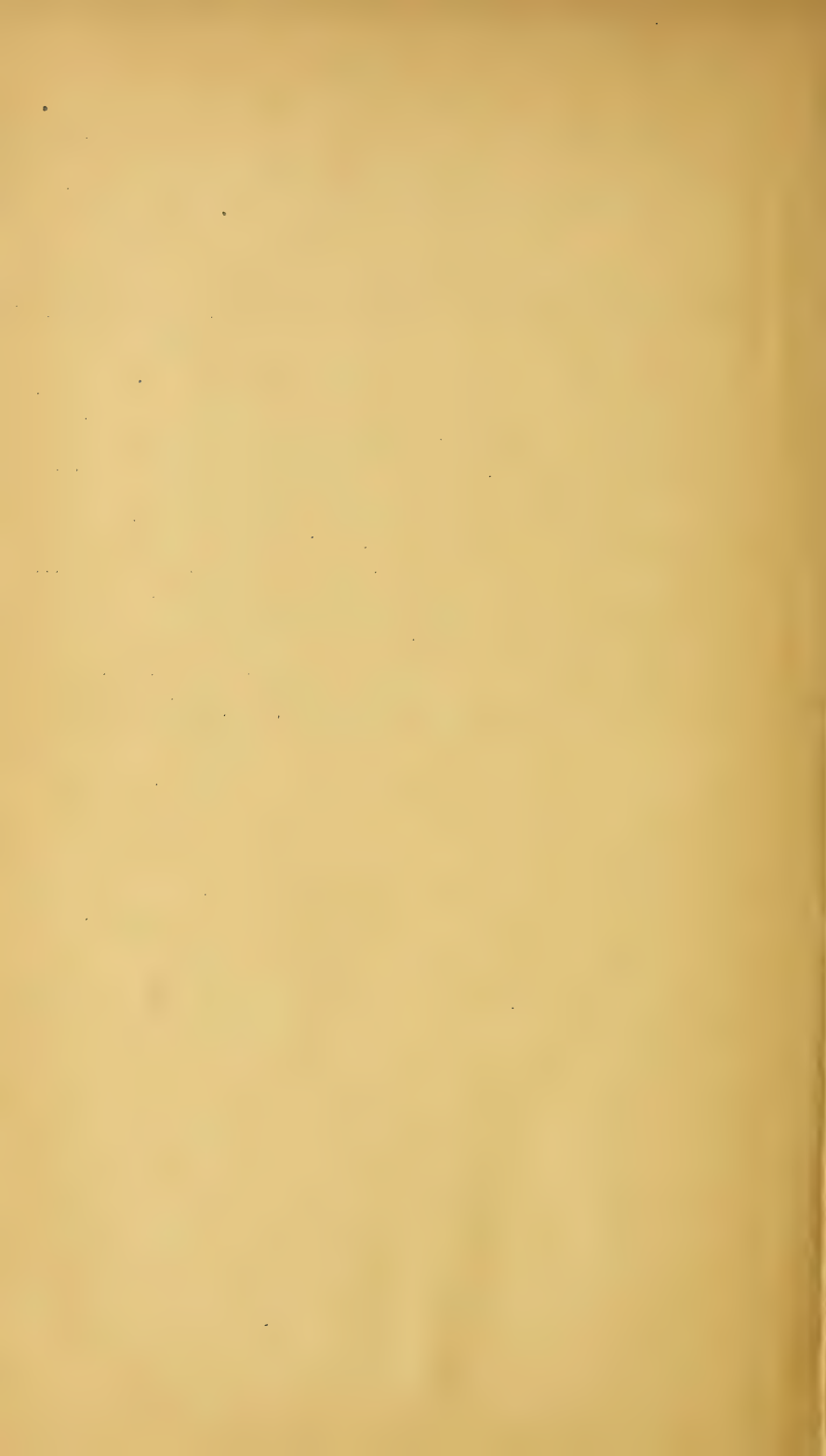
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APPENDIX 7

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A B S T R A C T S

OF THE

ANNUAL REPORTS OF THE COLLEGES

OF THE

University of the State of New York

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COLLEGES IN THE UNIVERSITY OF THE STATE OF NEW YORK, JULY 31, 1890

"The term college as used in this act shall include all institutions of higher education which are authorized to confer degrees." (Laws of 1889, ch. 529, Title 2 § 1.)

Colleges of arts and science for men	Colleges of arts and science for women	Colleges of arts and science for men and women	Schools of law	Schools of medicine	Schools of pharmacy	Schools of theology	Polytechnic schools
1 Columbia College, October 31, 1754	1 Elmira College, April 13, 1855	1 St. Lawrence University, April 3, 1855	1 University of the City of New York, Law Department, June 2, 1835	1 Columbia College, College of Physicians and Surgeons, March 12, 1807	1 College of Pharmacy of the City of New York, April 25, 1891	1 *Hartwick Seminary, Theological Department, April 17, 1816	1 Rensselaer Polytechnic Institute, March 21, 1826
2 Union University, February 25, 1795 - Union College till April 10, 1873	2 Ingham University, April 3, 1857	2 Alfred University, March 28, 1857	2 Union University, Albany Law School, April 17, 1851	2 University of the City of New York, Medical Department, February 11, 1837	2 Union University, Albany College of Pharmacy, June 21, 1881	2 *Hamilton Theological Seminary, March 5, 1819	2 Columbia College, School of Mines, —, 1864
3 Hamilton College, May 26, 1812	3 Vassar College, January 18, 1861	3 Cornell University, April 27, 1865	3 Columbia College, School of Law, May —, 1858	3 Union University, Albany Medical College, February 16, 1839	3 University of Buffalo, College of Pharmacy, March 3, 1886	3 *Auburn Theological Seminary, April 14, 1820	Special
4 Hobart College, February 8, 1825	4 Drew Seminary and Female College, April 23, 1866	4 Syracuse University, March 29, 1870	4 Cornell University Law School, June 16, 1886	4 University of Buffalo, Medical Department, May 11, 1846		4 General Theological Seminary of the Protestant Episcopal Church, April 5, 1822	
5 University of the City of New York, April 18, 1831	5 Rutgers Female College, April 11, 1867		5 Niagara University, Buffalo Law School, May 9, 1857	5 New York College of Veterinary Surgeons, April 6, 1857		5 *Union Theological Seminary, March 27, 1839	1 Union University, Dudley Observatory, April 3, 1852
6 Colgate University, March 26, 1846	6 Wells College, March 28, 1868			6 Long Island College Hospital, March 6, 1858		6 *Rochester Theological Seminary, —, 1850	2 Cooper Union, February 17, 1857
7 St John's College, Fordham, April 10, 1846	7 Claverack College and Hudson River Institute, June 4, 1869			7 New York Homoeopathic Medical College, April 12, 1860		7 German Martin Luther College, August 26, 1853	3 Syracuse University, College of Fine Arts, June 23, 1873
8 University of Rochester, February 14, 1851	8 Normal College of the City of New York, June 9, 1868			8 Bellevue Hospital Medical College, April 3, 1861		8 St Lawrence University, Canton Theological Seminary, April 3, 1866	4 Columbia College, School of Political Science, June 7, 1880
9 College of the City of New York, April 15, 1854	9 Barnard College, August 5, 1889			9 New York Medical College and Hospital for Women, April 14, 1863		9 Alfred University, Theological Department, March 28, 1857	5 Chautauqua University, March 30, 1883
10 St Stephen's College, March 20, 1860				10 Women's Medical College of the New York Infirmary, April 13, 1864		10 Christian Biblical Institute, April 16, 1868	6 Grand Conservatory of Music, May 23, 1884
11 College of St Francis Xavier, January 16, 1861				11 New York College of Dentistry, March 31, 1865		11 Chautauqua School of Theology, March 29, 1881	7 New York College of Magnetism, January 28, 1887
12 Manhattan College, April 2, 1863				12 Eclectic Medical College, April 22, 1865		12 Niagara University, Seminary of Our Lady of Angels, August 7, 1883	8 Pratt Institute, May 19, 1887
12a St Joseph's College				13 Syracuse University, College of Medicine, January 6, 1872		13 Wagner Memorial Lutheran College, July 30, 1885	9 New York College for the Training of Teachers, January 12, 1889
13 Polytechnic Institute of Brooklyn, June 4, 1869				14 American Veterinary College, April 29, 1875			10 University of the City of New York, School of Pedagogy, March 3, 1890
14 St John's College, B'klyn September 29, 1871				15 N-w York Ophthalmic Hospital, May 20, 1879			11 New York State Normal College, March 13, 1890
15 St Bonaventure's College, March 1, 1875				16 New York Polyclinic, November 15, 1882			
16 Canisius College, January 11, 1883							
17 Niagara University, August 7, 1883				17 Niagara University, Medical Department, August 7, 1883			
18 St Francis' College, May 8, 1884				18 New York Post Graduate Medical School and Hospital, May 25, 1886 (Confers no degrees as instruction is given only to graduates and legal practitioners.)			

\* Confers no degrees.

## COLUMBIA COLLEGE

*New York*

CONSISTING OF

School of Arts	School of Mines
School of Law	School of Political Science
College of Physicians and Surgeons	School of Philosophy

## HISTORIC SKETCH

For list of date abbreviations, see p. 254.

Month	Year	
D	1746	Assembly authorized raising funds by public lottery "for the encouragement of learning and towards the founding of the college" within the colony.
N	1751	Funds vested in 10 trustees.
Jl	1754	Dr Samuel Johnson began instruction of students in a room of Trinity church school house.
31 O	"	Chartered as "King's College."
13 My	1755	Trinity church granted land for site at foot of upper Robinson st. (later Park place). College built on a portion of this grant. Remainder became in later years a valuable endowment.
	1763	Grammar school established in connection with college.
	1767	Medical school established.
1 My	1784	The college, which had been seriously interrupted by the Revolutionary war, revived and reorganized as a university; corporate title changed to Colum- bia College; placed under control of the regents of the University.
Ap	1787	Legislature restored college under present name to original position and confirmed original charter with necessary alterations.
	1810	Legislature granted a new amended charter.
N	1813	Medical school discontinued because of establish- ment of College of Physicians and Surgeons.
	1827	Grammar school established by trustees and put under superintendence of college faculty.



- | Month | Year |  |
|-------|------|--|
| N     | 1829 | Buildings erected on college ground for a grammar school.  |
|       | 1857 | College removed to present location.   |
| My    | 1858 | Law school established.  |
|       | 1860 | College of Physicians and Surgeons adopted as medical department. The united authority of the two institutions is necessary to confer degrees; all medical diplomas bear the signature of the president of Columbia with those of the faculty of medicine. The College of Physicians and Surgeons has independent trustees, and its finances are entirely distinct from those of Columbia.                                       |
|       | 1864 | Grammar school discontinued. School of Mines established. Previous to this there was no school in the United States where mining was taught as a science.  |
| 7 Je  | 1880 | Trustees established School of Political Science. The instruction in this department deals with subjects both of internal and external public polity from the three points of view,—of history, law and philosophy. Provision also made for graduate instruction.  |
| Je    | 1883 | Collegiate course for women established. Completion of certain lines of work entitled successful candidates to certificates.   |
| 5 My  | 1884 | Columbia College School of Library Economy for professional training of librarians established.  |
| 5 Ja  | 1887 | Course of instruction in library school opened.  |
| F     | 1887 | Collegiate course for women modified by offering the degree of B. A. to such women as completed a full course equivalent to that taken by the young men. No new students were received in the collegiate course for women after 1889, because of the establishment of Barnard College. Candidates who satisfactorily complete a four years course in Barnard College may on proper recommendation receive degrees from Columbia. |
| 1 Ap  | 1889 | Library school transferred to State Library, Albany, Columbia no longer offering training for librarianship.   |

Month      Year

My 1890 Trustees adopted plan for organization of university instruction in connection with the college, created a faculty of philosophy, placed all university work in mathematics and natural and applied sciences under faculty of School of Mines, and constituted a university council to have general supervision of university work as a whole.

## TRUSTEES

*The College of Physicians and Surgeons has independent trustees.*

Elected

1851	Chairman, Hamilton Fish, LL. D.	251 E. 17 st.
1878	Clerk, Gerard Beekman, LL. B., M. A.	5 E. 34 st.
1860	William C. Schermerhorn	49 W. 23 st.
1862	Morgan Dix, S. T. D., D. C. L.	27 W. 25 st.
1867	Samuel Blatchford, LL. D.	Washington, D. C.
1868	Stephen P. Nash, LL. D.	11 W. 19 st.
1873	Joseph W. Harper.	562 Fifth av.
1876	Charles A. Silliman	25 Whitehall st.
1877	Frederick A. Schermerhorn	61 Univ. pl.
1879	Abram N. Littlejohn, D. D.	Garden City
1880	W. Bayard Cutting	18 W. 57 st.
1880	Edward Mitchell	31 E. 50 st.
1881	Talbot W. Chambers, S. T. D.	70 W. 36 st.
1881	Seth Low, LL. D.	30 E. 64 st.
1882	George L. Rives	12 E. 37 st.
1883	Lenox Smith	19 William st.
1884	George L. Peabody, M. D.	57 W. 38 st.
1885	John Crosby Brown	36 E. 37 st.
1887	Henry C. Potter, D. D., LL. D.	160 W. 59 st.

## APPOINTED DURING YEAR

1889	William H. Draper, M. D.	19 E. 47 st.
1889	Marvin R. Vincent, S. T. D.	136 E. 37 st.
1890	Jóhn B. Pine, B. A.	50 Pine st.

## VACANCIES

A. Ernest Vanderpoel, resigned 7 O 1889  
 John J. Townsend, died 5 D 1889  
 Charles M. Da Costa, died 22 Je 1890

## SCHOOL OF ARTS

*Madison av. and 49 st., New York*

For historic sketch see p. 543.



## ADMINISTRATION

Figures in column at left give first year of service in Columbia.

*The official report of Columbia does not include the names of the librarians and assistants, the proctor, superintendent and various other administrative officers.*

1889 President, Seth Low, LL. D. . . . . Columbia College

B. A. Columbia 1870; LL. D. University of the State of New York  
1889, Columbia 1890, Amherst, University of Pennsylvania,  
Harvard, Trinity.

1843 Dean, Henry Drisler, LL. D. . . . . 48 W. 46 st.

1860 Secretary, John Howard Van Amringe,

Ph. D., L. H. D. . . . . 115 W. 44 st.

Chaplain, Cornelius R. Duffie, S. T. D. . . 263 Lexington av.

Registrar, William B. Nye . . . . . 107 E. 70 st.

Secretary to the President, Bertha C.

Macy . . . . . Columbia College

## INSTRUCTION

Figures in column at left give first year of service in Columbia and years spent in teaching.

1843 Henry Drisler, LL. D. Jay Professor of Greek, 48 W. 46 st.  
See also "Administration".

1857 William G. Peck, M. A., Ph. D., LL. D. Professor of Higher  
44 Mathematics, Mechanics and Astronomy, Greenwich, Ct.

M. A. and LL. D. Trinity; Ph. D. Columbia; Assistant professor of mathematics, U. S. Military Academy, 1847-55; Professor of civil and mining engineering, University of Michigan, 1855-7; Author Complete course of mathematics (Arithmetic, Algebra, Geometry, Analytical Geometry, Calculus), Popular and analytical mechanics, Popular astronomy, Treatise on determinants, Editor Peck's Ganot's physics, Davies' and Peck's encyclopedia of mathematics.

1860 J. Howard Van Amringe, M. A., Ph. D., 115 W. 44 st.  
See also "Administration."

1863 Ogden N. Rood, M. A. Professor of Mechanics and Physics

31 M. A. Princeton; Member of National Academy of Sciences;  
Author of numerous papers in American journal of science  
and arts.

1876 John W. Burgess, M. A., Ph. D., LL. D. Professor of History, Political Science and International and Constitutional Law, 323 W. 57 st.

B. A. Amherst 1867, M. A. 1870; Ph. D. Princeton 1883; LL. D. Amherst 1884; Professor of history and political economy, Knox College 1869-71; Professor of history and political science, Amherst 1873-6; Member American Geographical Society, American Historical Society, American Academy of Political Science, American Economic Association; Author Political science and comparative constitutional law; Co-editor Political science quarterly.

1864 Charles F. Chandler, Ph. D., M. D., LL. D. Professor of Chemistry, 51 E. 54 st.

1866 John S. Newberry, M. D., LL. D. Professor of Geology and Paleontology.

1868 Augustus C. Merriam, M. A., Ph. D. Professor of Greek, 24 Archeology and Epigraphy, 640 Madison av.

B. A. Columbia 1866, M. A. 1869; Ph. D. Hamilton 1879; Instructor, Columbia Grammar School 1867-8; Tutor of Greek and Latin, Columbia 1868-76; Tutor of Greek 1876-80; Adjunct professor of Greek 1880-90; Director American School of Classical Studies (Athens) 1887-8; Publications, Phæacians of Homer 1880, Greek and Latin inscriptions on the obelisk crab in the Metropolitan Museum 1883, Sixth and seventh books of Herodotus 1885, Law code of the Cretan Gortyna 1886 and various reports and contributions to archaeological journals.

1882 Thomas R. Price, M. A., LL. D. Professor of English 26 Language and Literature, 23 W. 53 st.

M. A. University of Virginia 1858; LL. D. Randolph-Macon College 1877; Professor of Greek and Latin, Randolph-Macon 1868-70, Greek and English, 1870-6; Professor of Greek, University of Virginia 1876-82.

1880 Charles Sprague Smith, M. A. Professor of Romance Languages and Literature, 57 E. 76 st.

B. A. Amherst 1874, M. A. 1880; Member American Geographical Society. Contributions to periodicals.

1881 Hjalmar H. Boyesen, Ph. D. Professor of Germanic Languages and Literature, 48 W. 45 st.

- 1877 Richmond Mayo Smith, M. A., Ph. D. Professor of Political  
14 Economy and Social Science, 144 Columbia Heights,  
Brooklyn.

B. A. Amherst 1875, M. A. 1878, Ph. D. 1890; Fellow Royal Statistical Society; Vice-president American Statistical Association; Member International Statistical Institute, National Academy of Sciences; Author Emigration and immigration 1890; Co-editor Political science quarterly.

- 1880 Munroe Smith, M. A., J. U. D. Adjunct Professor of His-  
tory and Lecturer on Roman Law, 40 E. 30 st.

B. A. Amherst 1874, M. A. 1880; LL. B. Columbia 1877; J. U. D. Göttingen University 1880; Instructor in history, Columbia 1880-3; Adjunct professor of History 1883-; Lecturer on Roman law 1880-; Member Academy Political Science, American Historical Association, Société de Législation Comparée; Managing editor Political science quarterly.

- 1873 John K. Rees, M. A., M. E. Professor of Geodesy and  
18 Practical Astronomy and Director of the Observatory,  
The "Dakota", 1 W. 72 st.

B. A. Columbia 1872, M. A. 1874, M. E. 1875; Assistant in mathematics, School of Mines 1873-6; Professor of mathematics and astronomy, Washington University (St Louis) 1876-81; Director of observatory, Columbia 1881; Fellow New York Academy of Science, American Association for the Advancement of Science; Vice-president New York Mathematical Society; Secretary and treasurer American Metrological Society; Editor School of mines quarterly 1884.

- 1870 John D. Quackenbos, M. A., M. D. Adjunct Professor of  
21 the English Language and Literature, 331 W. 28 st.

B. A. Columbia 1868, M. A. 1871; M. D. College of Physicians and Surgeons 1871; Member New York Academy of Science; Fellow American Geographical Society, New York Academy of Medicine; Author Appleton's history of the world, History of ancient literature, Appleton's physical geography; Editor Appleton's standard geography, Quackenbos' rhetoric.

- 1876 Jasper T. Goodwin, M. A., LL. B. Adjunct Professor of  
15 Mathematics, 929 Park av.

B. A. Columbia 1876, M. A. and LL. B. 1878.



- 1882 Harry Thurston Peck, M. A., Ph. D., L. H. D. Professor  
10 of the Latin Language and Literature, 143 E. 21 st.

B. A. Columbia 1881, M. A. 1882; Ph. D. Cumberland University 1883; L. H. D. Columbia 1884; Fellow in classics, Columbia 1881-4; Tutor in Latin 1882-5; Tutor in Latin and the Semitic languages 1885-8; Professor of Latin 1888; Member American Oriental Society, American Philological Society, American Folklore Society, Institute of Archeology, Academy of Anthropology; Author Commentary on Suetonius, Semitic theory of creation, Latin pronunciation; Editor-in-chief International encyclopedia; Editor The student's series of Latin classics.

- 1882 Nicholas Murray Butler, Ph. D. Professor of Philosophy,  
11 Ethics and Psychology and Lecturer on the History and Institutes of Education, 225 E. 17 st.

B. A. Columbia 1882, M. A. 1883, Ph. D. 1884; Fellow in Philosophy, Columbia 1882-5; Assistant, 1885-8; Adjunct professor, 1888-90; President New York College for the Training of Teachers 1889; Editor Educational review.

- 1887 Richard J. H. Gottheil, Ph. D. Professor of Rabbinical  
Literature and Instructor in the Semitic Languages, 681  
Madison av.

B. A. Columbia 1881; Ph. D. University of Leipzig 1886; Lecturer on the Syriac language and literature, Columbia 1886; Professor of rabbinical literature 1887; Instructor in Semitic languages 1889; Member Deutsche Morgenländische Gesellschaft, Deutsch-Verein zur Erforschung Palästinas, Akademisch-Orientalistischen Verein (Berlin), American Oriental Society, American Philological Society, Society of Biblical Literature and Exegesis. Editor and translator Treatise on Syriac grammar, 1887; Author of many periodical articles on Oriental subjects; Associate editor Orientalische Bibliographie.

- 1883 William Henry Carpenter, Ph. D. Adjunct Professor  
of Germanic Languages and Literatures, Columbia  
College.

B. A. and Ph. D. Freiburg in Baden; Fellow by courtesy, Johns Hopkins University 1881-3; Instructor in Rhetoric and Lecturer on North European Literature, Cornell 1883; Instructor in German and the Scandinavian Languages, Columbia 1883-9; Assistant professor of German and the Scandinavian Languages 1889-90.

- 1880 Edward Delevan Perry, M. A., Ph. D. Tutor in Greek and  
11 Instructor in Sanskrit, 133 E. 55 st.

B. A. Columbia 1875; M. A., Ph. D. University of Tübingen, 1879; Tutor in Greek, Columbia 1880-; Tutor in Sanskrit 1880-3; Instructor in Sanskrit 1883-; Member American Oriental Society, American Philological Association, Deutsche Morgenländische Gesellschaft; Author Sanskrit primer 1885.

- 1883 Frank J. Goodnow, LL. B., M. A. Instructor in History  
7 and Adjunct Professor of Administrative Law, 25 W. 74 st.

B. A. Amherst 1879, M. A. 1886; LL. B. Columbia 1889; Editor Political science quarterly.

- 1883 Bernard F. O'Connor, B. ès L., Ph. D. Instructor in French,  
8 Glen Cove, L. I.

B. ès L. University of France 1874; Ph. D. Johns Hopkins 1883; Lecturer, Johns Hopkins 1883; Instructor in French, Columbia 1883-; Lecturer on Norman-French, Columbia Law School 1890-; Member Modern Languages Association of America; Editor *Choix de contes contemporains*, Anglo-Norman tests from year book of Henry IV.

- 1884 A. V. Williams Jackson, M. A., L. H. D., Ph. D. Instructor  
7 in Anglo-Saxon and the Iranian Languages, 16 Highland pl., Yonkers.

B. A. Columbia 1883, M. A. 1884, L. H. D. 1885, Ph. D. 1886; Fellow in letters 1883-6; Instructor in the Iranian languages 1886-; Instructor in Anglo-Saxon 1889-; Member American Oriental Society, American Philological Society, Victoria Institute; Author *Hymn of Zoroaster* 1888, *Avesta series* 1890.

- 1879 Nathaniel L. Britton, M. E., Ph. D. Adjunct Professor of  
12 Botany.

M. E. Columbia 1879, Ph. D. 1881; Assistant in geology 1879-86; Instructor in botany 1886-90; Adjunct professor of botany 1880-; Editor *Publications of Torrey Botanical Club*.

- 1887 William A. Dunning, Ph. D. Lecturer on Political Philosophy and Instructor in History and Political Science, 70  
17 Hanson pl., Brooklyn.

Instructor in history and political science, Adelphi Academy 1881-3; Editor *Political science quarterly*.

- 1885 Thomas Scott Fiske, M. A., Ph. D. Tutor in Mathematics,  
6 Elizabeth, N. J.

B. A. Columbia 1885, M. A. 1886, Ph. D. 1888; Fellow 1885-8,  
Tutor 1888-; Member American Association for the Advance-  
ment of Science, New York Academy of Science.

- 1890 J. McK. Cattell, M. A., Ph. D. Lecturer on Psychology,  
6 Morton, Pa.

B. A. Lafayette 1880, M. A. 1883; Ph. D. University of Leipzig  
1886; Fellow Johns Hopkins 1882-3; Assistant in University  
of Leipzig 1885-6; Lecturer, University of Pennsylvania  
1886-8; Lecturer, Bryn Mawr 1888; Lecturer, University of  
Cambridge 1888; Professor of psychology, University of  
Pennsylvania 1888-; Member American Philosophical  
Society, Neurological Society of London, The Aristotelian  
Society of London; Co-editor Philosophical series of publica-  
tions of University of Pennsylvania.

- 1884 James C. Egbert, jr., M. A., Ph. D. Tutor in Latin, 364  
12 Webster av., Jersey City.

B. A. Columbia 1881, M. A. 1882, Ph. D. 1884; Prize fellow 1883-6;  
Fellow, assistant in Greek 1887-8; Tutor in Latin 1888;  
Member American Philological Society.

- 1889 James H. Hyslop, M. A., Ph. D. Tutor in Philosophy,  
9 Ethics and Psychology, 223 E. 11 st.

M. A. Wooster University; Ph. D. Johns Hopkins; Assistant  
in Lake Forest Academy 1879-80, Principal 1880-2; Professor  
of Latin and philosophy, Lake Forest Academy 1884-5; Lec-  
turer on psychology and ethics, Smith 1885-6; Fellow at  
Johns Hopkins 1886-8; Professor of philosophy, Bucknell  
University 1888-9; Member Society for Psychical Research.  
Author of numerous contributions to periodical literature.

- 1889 Nelson Glenn McCrea, Ph. D. Tutor in Latin, 533 Franklin  
av., Brooklyn.

- 1884 Daniel K. Dodge, M. A., Ph. D. Tutor in the English  
7 Language and Literature, 136 E. 48 st.

B. A. Columbia 1884, M. A. 1885, Ph. D. 1886; Fellow, assistant  
in English 1884-9.

- 1888 Harold Jacoby, B. A. Assistant in Geodesy and Practical  
5 Astronomy, 15 W. 53 st.

B. A. Columbia 1885; Fellow Royal Astronomical Society, New  
York Academy of Sciences; Member American Association  
for the Advancement of Science, American Metrological  
Society.



- 1877 Louis H. Laudy, Ph. D. Assistant in General Chemistry, School of Mines.
- 1887 Edmund A. Wasson, M. A., Ph. D. Assistant Teacher in English, Sea Side, S. I.
- 1888 Charles Knapp, M. A. Fellow, Assistant in Latin, 304 W. 16 st.
- 1888 James Maclay, C. E. Fellow, Assistant in Mathematics, Newark, N. J.
- 1888 Hampton D. Ewing, M. A. Fellow, Assistant in Physics, Yonkers.
- 1888 Clarence H. Young, M. A. Fellow, Assistant in Greek, 308 3 W. 58 st.  
B. A. Columbia 1888, M. A. 1889; Member New York Society of Archeological Institute of America, American Philological Association.
- 1888 Charles Sears Baldwin, M. A. Assistant Teacher in English, 997 Bergen st., Brooklyn.
- 1888 Reginald Gordon, B. A. Assistant in Physics, 76 Park av.  
3 B. A. Columbia 1888; Associate Member American Institute Electrical Engineers.
- 1888 Benjamin Duryea Woodward, M. A., B. ès L. Tutor in 2 Romance Languages, 41 E. 49 st.  
B. A. Columbia 1888, M. A. 1889; B. ès S. Sarbonne, Paris, 1885, B. ès L. 1886; Fellow in Columbia 1888-90; Member American Dialect Society, American Oriental Society.
- 1889 George C. D. Odell, B. A. Fellow, Assistant in Latin, 144 Madison av.
- 1889 Joseph C. Pfister, M. A. Tutor in Mathematics and Astronomy and Assistant in Mechanics, 102 Livingston st., Newark, N. J.  
M. A. 1890.
- 1889 Gustavus F. Donnell, B. A. Fellow, Assistant in Mathematics, Tompkinsville.
- 1886 Mortimer Lamson Earle, Ph. D. Honorary Fellow, Assistant in Greek, 343 Madison av.  
B. A. Columbia 1886, M. A. 1887, Ph. D. 1889; Prize fellow and assistant in Greek, 1886-9; In charge department of Greek, Barnard 1889; Honorary Fellow, Columbia 1889-90; Member Archeological Institute of America, American Philological Association, American Folk-lore Society.

1890 Charles Harris Hayes, B. A. Fellow in the Germanic Languages and Literatures, Madison, N. J.

B. A. Columbia 1890.

1890 F. R. Hathaway, M. A. Fellow in the Department of Political Economy and Social Science, Yonkers.

B. A. Columbia 1888, M. A. 1889; Member American Economic Association, American Statistical Association, American Academy of Political and Social Science.

1857 William H. Walter, Mus. Doc. Organist and Instructor in  
45 Vocal Music, 2315 Ryer av., Fordham.

Mus. Doc. Columbia 1865; Organist 1857; Teacher of music, Public Schools 1870-; Author Selections of psalms with chants 1857, Manual of church music 1863, Chorals and hymns 1866, Common prayer with ritual song 1868, Walter's lessons in music 1882, Mass in C 1886, The hymnal with tunes, old and new 1872.

1890 Harold Griffing. Fellow, Assistant in Latin.

1890 Charles R. Mann, B. A. Fellow, Assistant in Physics, Orange, N. J.

B. A. Columbia 1890.

#### VACANCIES

Alexander F. Parker, B. A. (Columbia) Tutorial fellow in physics. Died 1889.

1882 Bertrand Clover, B. A. (Columbia) Instructor in Spanish and Italian. Resigned Je 1890.

#### APPOINTED DURING YEAR

Seth Low, LL. D. President. Elected O 1889; installed 3 F 1890.

<sup>1</sup> Benjamin D. Woodward, M. A., B. ès L. Tutor in the Romance languages. Appointed 7 Ap 1890.

<sup>1</sup> Frank R. Hathaway, M. A. Fellow in the department of political science. Appointed 5 My 1890.

<sup>1</sup> Charles Harris Hayes, B. A. Tutorial fellow in the Germanic languages and literature. Appointed 5 My 1890.

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<sup>1</sup> To date from 1 Jl 1890.

<sup>1</sup>Charles Knapp, M. A. Tutorial fellow in Latin. Appointed 5 My 1890.

<sup>1</sup>J. McK. Cattell, M. A., Ph. D. Lecturer on psychology. Appointed 2 Je 1890.

<sup>2</sup>Othy B. Parker, M. E. Tutorial fellow in the department of physics. Appointed 4 N 1889.

#### PROMOTIONS

##### In title alone

Wm. G. Peck, Ph. D., LL. D. Professor of higher mathematics and astronomy from Professor of mathematics and astronomy.

Augustus C. Merriam, M. A., Ph. D. Professor of Greek archeology and epigraphy from Adjunct professor of the Greek language and literature.

Nicholas Murray Butler, Ph. D. Professor of philosophy, ethics and psychology from Adjunct professor of the same.

Hjalmar H. Boyesen, Ph. D. Professor of the Germanic languages and literature from Gebhard professor of the German languages and literature.

Charles Sprague Smith, M. A. Professor of the Romance languages and literatures from Professor of modern languages and foreign literatures.

##### In salary alone

John D. Quackenbos, M. A., M. D.

William Henry Carpenter, Ph. D.

Frank J. Goodnow, LL. B., M. A.

##### In both title and salary

A. V. Williams Jackson, M. A., Ph. D., L. H. D. Instructor in Anglo-Saxon and the Iranian languages from (not reported).

Reginald Gordon, B. A. Assistant in physics from Tutorial fellow in physics.

#### HONORARY DEGREES

LL. D.—Wm. H. C. Bartlett . . . . .	Yonkers
James W. Gerard . . . . .	New York
S. T. D.—Rev. Samuel Bowden . . . . .	Le Roy
L. H. D.—Prof. J. Howard Van Amringe . . . . .	New York

<sup>1</sup> To date from 1 J1 1890.

<sup>2</sup> Not reported in full list of faculty.



## COLLEGE APPOINTMENTS

(None)

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Chanler historical prize, William Bondy, New York .....	\$60
Prize of the Alumni Association, John Perry Seward, New York.....	50

*Freshman class*

Scholarship in Greek, Charles L. Pollard, New York .....	100
“ Latin, George L. Laporte, Jersey City.....	100
“ English, Charles L. Pollard, New York .....	100

*Sophomore class*

Scholarship in Greek, Charles A. Valadier, New York.....	100
“ Latin, Henry J. Burchell, jr., New York ....	100
“ mathematics, Joseph C. Wight, Brooklyn ...	100
“ history, George L. Beer, New York .....	100
“ chemistry, Robert A. Ashworth, New York..	100

*Junior class*

Scholarship in Greek, John T. Putnam, Salt Lake City.....	100
“ Latin, William Harison, Astoria .....	100
“ English, Marcus Simpson, Yonkers .....	100
“ mechanics, Edward Hymes, Newark, N. J. ...	100
“ physics, Charles Barton, Astoria .....	100
Fellowship in letters, Harold Griffing, New Rochelle.....	500
“ science, Charles R. Mann, Orange, N. J.....	500

## REQUIREMENTS FOR ADMISSION

## UNDERGRADUATE DEPARTMENT

See table 2.

## GRADUATE DEPARTMENT

1 Bachelors of arts, bachelors of science, and bachelors of philosophy of this college or of any other college in good standing may be admitted to the graduate department as students, on exhibiting their diplomas to the president, and presenting to him such other testimonials as he may require.

2 Any such student may attend a single course or any number of courses which he may elect to pursue. He may also, at his option, enter himself as a candidate for the degree of master of arts, subject to the conditions hereafter stated.

3 No student entering at the beginning of the year will be received for a less period than an entire year, and no student entering later will be received for a less period than the entire remaining portion of the year current.

4 Any student of the graduate department, pursuing a full course, may attend any courses in any school of the college without paying any further full fee for tuition. But he shall be required to matriculate in each school which he attends, and to pay the difference (if any) in tuition fees.

Time of entrance — Students intending to join the graduate department may enter their names with the president, on the Monday before commencement day in June, or on the Friday next before the opening of the scholastic exercises in October. It is not advantageous to the student to enter after the beginning of the year; but in case applications are made later, the president may in his discretion receive or refuse the applicant. No student already a member of the graduate department will be allowed to enter on a new course after the year is advanced, without the consent of the president and of the instructor in such course.

## COURSES OF STUDY

### ELECTIVE STUDIES

1 Members of the freshman and sophomore classes must choose one modern language, instruction in which is given two hours per week throughout the year.

2 The required studies of the junior class in Greek, Latin, English, history and political economy, logic and psychology, occupy 11 hours per week during the first term, and nine hours per week during the second term. Other subjects of study are elective, subject to the provision that the studies selected by a student shall suffice, with the obligatory studies, to occupy at least 15 hours per week.

3 All the studies of the senior class are elective, subject to the provision that the studies selected by a student shall occupy at least 15 hours per week.

4 Students who have made their choice of elective studies to be pursued during the year are not permitted to abandon any study so selected in favor of another, without the permission of the faculty.

#### DEPARTMENTS OF INSTRUCTION

##### The Greek language and literature

The course of study and the text-books used in the different classes are as follows:

###### *Freshman class*

*First term*—Homer's *Odyssey* (3 bks); Homeric forms and syntax; scanning and prosody; exercises in writing Greek.

*Second term*—Herodotus (bks 6 & 7); syntax of the moods, with exercises in writing Greek continued.

###### *Sophomore class*

*First term*—Medea, Alcestis, Hippolytus, or Iphigenia in Tauris of Euripides; choral scanning; exercises in prosody and in writing Greek.

*Second term*—Xenophon's *Memorabilia* (2 bks), or bks 6 and 7 of Thucydides; exercises in writing Greek prose continued, with occasional exercises in Greek versification.

###### *Junior class*

*First term*—A drama of Sophocles; choral scanning; exercises in writing Greek prose and in Greek versification continued; instruction will also be given by lecture on points connected with the Greek drama.

(Elective)—Select idyls of Theocritus, or selections from the lyric or dramatic poets, or Theognis.

*Second term*—One dialogue of Plato, or the *Philippics* of Demosthenes; select orations of Lysias; lectures on subjects connected with the course of reading, Greek philosophy or Attic law.

(Elective)—Select orations of Isocrates, or selections from the *Dialogues* of Plato; or Hesiod, the *Works and Days*, or the *Theogony*.

###### *Senior class*

*First term*—Two dramas of Æschylus, or the *Olympic* or *Pythian Odes* of Pindar; choral scanning; with occasional lectures on the subject of study.



*Second term* — Demosthenes or Æschines, Oration on the crown ; or portions of the ethics or politics of Aristotle ; or of the Republic of Plato ; or history of Greek literature by lecture and from textbook ; elements of comparative philology.

### The Latin language and literature

#### *Freshman class*

*First term* — The Odes, Epodes, and Carmen sæculare of Horace ; review of prosody with the scanning of Horace ; syntax of nouns ; Latin prose composition ; sight reading of easy Latin.

*Second term* — Cicero : the Brutus ; syntax of the moods ; Latin prose composition ; sight reading of Latin.

#### *Sophomore class*

*First term* — The Satires and Ars poetica of Horace ; critical study of prosody ; introduction to etymology ; sight reading of Latin.

*Second term* — The Annals of Tacitus ; lectures on the Roman historians ; Latin prose composition ; sight reading of Latin.

#### *Junior class*

*First term* — The Satires of Juvenal ; lectures on the origin and development of Roman satire.

(Elective) — The Andria of Terence ; Latin verse composition ; lectures.

*Second term* — The De officiis of Cicero ; lectures on Roman philosophy ; original composition in Latin.

(Elective) — Terence ; the Phormio.

#### *Senior class*

*First term* — (a) The Menæchmi of Plautus, with a critical study of the comic prosody ; lectures on the Roman drama. (b) Suetonius : bks 1 and 2. (c) Historic grammar.

*Second term* — (a) Lucretius. (b) Latin epigraphy. (c) Lectures on Roman literature.

### Romance languages and literatures

The department is arranged on the basis of a four years' undergraduate course irrespective of college classes.

## FRENCH

• *First year*

Chardenal's First French course.

O'Connor's *Choix de contes contemporains*.

*Second year*

Chardenal's Second French course.

Brachet and Dussouchet's *Petite grammaire Française*, Part 2.

E. About, *La mère de la marquise*.

L. Halevy, *L'Abbé Constantin*.

Composition.

*Third year**First term :*

1 In class. Modern comedies : E. Pailleron, *Le Monde où l'on s'ennuie* ; A. Belot, *Le testament de César Girodot*.

Modern novels : Erckmann-Chatrian, *Madame Thérèse* ; Balzac, *La Peau de Chagrin*.

2 Outside reading to the extent of 300 pages, 12mo, with essays in French on the works read.

*Second term :*

1 In class. Composition ; study of the masterpieces of the great writers of the 17th century : Molière, Corneille, Racine, Pascal, *La Bruyère*, Bossuet, Fénélon.

2 Outside classical reading to the extent of 300 pages, with essays in French on works read.

Chassang's *Grammaire Française (Cours Moyen)*.

*Fourth year*

## Lectures

1 History of French literature from the origin to the end of the 16th century ; twice a week.

2 History of French literature during the 17th century ; twice a week.

3 History of French literature from the beginning of the 18th century down to present time ; twice a week.

## Recitation

4 In class. 19th century. Victor Hugo, *Hernani* ; Augier, *Le fils de Giboyer* ; Mérimée, *Colomba*. Exercises on idioms will be selected in Chardenal's Course for advanced pupils.

Outside reading to extent of 1,200 pages, 12mo.

## Voluntary course — one hour a week

Reading, conversation and composition. This course is open to all students in the department.

## ITALIAN

*First year*

Sauer's Grammar.

Reading from De Amicis's *La Vita Militare*.

Italian conversation.

*Second year*

1 Translating from Macaulay's Essays on Italian writers.

Reading from Puccianti's *Antologia della prosa Italiana moderna*.

Comedies: Goldoni's *Il Bugiardo*; Giacosa's *Acquazzoni in Montagna*.

Outside reading to the extent of 250 pages 12mo, with résumé in Italian.

Conversation and composition.

2 Dante.

*Third year*

Manzoni's *I Promessi Sposi*.

Selections from Tasso, Ariosto, Boccaccio, Petrarca.

Italian composition.

Outside reading to the extent of 500 pages 12mo, with résumé in Italian.

*Fourth year*

G. Carducci's *Letture Italiane*.

Modern poetry: selections from Puccianti's *Antologia della poesia Italiana moderna*; Dante.

Nannucci's *Manuale delle letterature del Primo Secolo della lingua Italiana*.

Lectures: historic development of the Italian language; history of Italian literature.

## SPANISH

*First year*

Sales' Spanish grammar.

100 pages of Mantilla's *Libro de lectura*, no 3.

One book of *Gil Blas*.

Franz Thimm's Spanish self-taught.

Spanish conversation.

*Second year*

Selections from Don Quijote.

One drama from Ochoa's Piezas, or a modern novel.

Composition.

Outside reading to the extent of 250 pages 12mo, with résumé in Spanish.

*Third year*

Three dramas from Ochoa's Piezas.

Selections from Ochoa's Poesias Escogidas.

Outside reading to the extent of 500 pages 12mo, with essays in Spanish.

*Fourth year*

El Romancero del Cid.

Selections from earliest monuments in prose and poetry from *Escritores en prosa anteriores al siglo 15*; *Poetas Castellanas anteriores al siglo 15*; Vols. 51 and 57 of *Autores Españoles*, edition Rivadeneyra.

Lectures: historic development of Spanish language; history of Spanish literature.

## Germanic languages and literatures

*First year—two hours a week*

Whitney's Brief German grammar.

Exercises in translation; conversation from Dreyspring's Easy lessons in German.

25 to 30 pages of text from Whitney's German reader.

## Optional course—two hours a week

*Second term*—Sight reading, conversation and composition.

*Second year—two hours a week*

*First term*—Schiller's Wilhelm Tell (Buchheim's edition); Dreyspring's Verb drill; Whitney's German grammar, as book of reference.

*Second term*—Hart's selections from Goethe's prose; or Buchheim's Heine's prosa; Whitney's German grammar.

## Optional course—two hours a week

Conversation and composition.



*Third year — two hours a week*

Conducted entirely in German.

1 Riehl's *Culturgeschichte* Novellen and Lessing's *Minna von Barnhelm* or *Nathan der Weise*.

2 Sight reading from German and translating at sight into German.

3 Outside reading to extent of 500 pages 12mo, with two essays in German.

*Fourth year — two or four hours a week*

*First course* — Goethe's *Faust*, first part entire and selections from second part. Boyesen's *Commentary to Faust* in Goethe and Schiller.

Critical study of Lessing's *Laokoön* (Hamann's edition).

*Second course* — Sight reading of German plays (Benedix's *Das Lügen*, Freytag's *Die Journalisten*, etc.), with special reference to elocution and the study of colloquial German.

In connection with this latter course, outside reading to the extent of 1,000 pages 12mo, with essays in German. This course will be conducted as far as possible in German.

## Lecture courses

Students of third and fourth years are admitted to lectures on literature.

German literature ; two hours a week.

Comparative philology, with special reference to the German language ; one hour a week.

*Fourth year*

## ICELANDIC

Sweet's *Icelandic grammar*.

Vigfusson and Powell's *Prose reader*.

## English language and literature

*Freshman class*

Bain's *Higher English grammar* ; Quackenbos's *Rhetoric and composition*, with practical exercises in writing English ; readings in contemporary English literature ; lectures on syntax ; lectures on English literature.

*Sophomore class*

Lounsbury's History of the English language; Quackenbos's Rhetoric and composition, with practical exercises in writing English; play of Shakspeare — Othello; lectures on historic grammar; lectures on English literature.

*Junior class*

Bain's Composition and rhetoric, with practical exercises in composition; Sweet's Anglo-Saxon primer; essays of Bacon; poetry of Milton and Spenser; lectures on literature and rhetoric.

*Senior class*

Morris's Specimens of early English; Bain's Composition and rhetoric, with practical exercises in essay-writing; Ward's English poetry; lectures on historic grammar of Anglo-Saxon and English languages, and on the form of English poetry, and philosophy of criticism.

**Mathematics**

The members of the sophomore class attend in mathematics three times per week throughout the year. They begin and complete plane, analytic and spheric trigonometry and mensuration; and solve many problems by construction and otherwise. They are instructed, also, during the second session, partly by lecture and partly from text-book, in surveying — embracing the measurement of lines and angles, the area or contents of ground, compass surveying, triangulation, leveling, topographic surveying, railway construction, the general methods of mining surveying, and the geodesic methods employed on the coast survey and on the great survey of the western territories.

The surveying instruments — the chain and tape, the surveyor's and solar compass, the surveyor's transit, the level and the leveling rod and the plane table — are shown and explained, and the students are practiced, as far as possible, on the necessary adjustments and methods of use.

During the year the members of the freshman class attend five times per week. They complete, during the first session, plane, volumetric and spheric geometry, with application to the solution of problems, and are taught and practiced in the use of logarithms of numbers. During the second session they are instructed in algebra, including Sturm's theorem, the general

demonstration of the binomial theorem, etc., and in elementary determinants, and are practiced in the applications of algebra to geometry.

Each of the classes has an occasional lecture on the logic and utility of mathematics, and on the models—geometric, metric weights and measures, etc.—which belong to the department.

Text-books—Freshman class: first term, Davies' Legendre to article 20 plane trigonometry; second term, Peck's Manual of algebra and Peck's Determinants. Sophomore class: trigonometry (Davies' Legendre) to article 78 in spheric trigonometry; second term, trigonometry and mensuration (Davies' Legendre) Davies' Surveying (revised edition).

### Mathematics and astronomy

The subjects of instruction embraced in this department are analytic geometry, calculus, mechanics and astronomy, all of which are elective studies.

1 *Analytic geometry and calculus*—These subjects are taught by means of text-books that have been compiled and collated for the purpose. Analytic geometry is taught to the junior class. It embraces the general principles of analysis, with special applications to the straight line, the conic sections and the elements of geometry of three dimensions. The calculus is taught to the seniors. The course in this branch is thorough and sufficiently extensive to meet the wants of the engineer, the astronomer and the student of general science.

Text-books—Junior class; first and second terms, Peck's Analytical geometry. Senior class: first term, Peck's Practical calculus (differential); second term, Peck's Practical calculus (integral).

2 *Mechanics*—This branch is taught during both terms of the junior year, by lectures, illustrated by models, of which the department has a complete collection. The course of instruction embraces the following subjects:

Composition and resolution of forces; principle of moments; center of gravity; elementary machines; friction and other hurtful resistances; laws of uniform and uniformly varied motion; the pendulum; centrifugal force and its application to the governor; moment of inertia and its application to the fly-wheel; mechanics of fluids, with applications to pumps, hydraulic presses and water-wheels; buoyancy and flotation, with applications to



specific gravity ; mechanics of gases and vapors, with applications to the barometer, the air-pump, siphons, etc.

Besides the apparatus usually employed to illustrate this subject, the department possesses a very complete set of Schroeder's working models to illustrate the principal elementary combinations of mechanism ; also a set of Willis's apparatus for experimental determinations.

Text-book : Peck's Elementary mechanics.

3 *Astronomy* — This subject is taught by means of a text-book, with explanatory lectures and lantern illustrations. The course is mostly descriptive, but it embraces a sufficient amount of physical and spheric astronomy to enable the student to comprehend the general theory of planetary motions, tides and eclipses, and also to understand the various methods of determining time, longitude and latitude.

Text-book : Peck's Popular astronomy.

### Practical astronomy

This study is elective or is optional with the members of the senior class who have the requisite mathematical knowledge.

The class is given two hours weekly during the senior year.

Text-book : Chauvenet's Spherical and practical astronomy, or Doolittle's Practical astronomy as applied to geodesy and navigation.

The exercises consist in lectures on the various instruments and their use ; recitations from the text-book and lectures ; and the reduction and discussion of the observations made by members of the class.

Each student is required to do a certain amount of work in the observatory and to reduce his observations.

The main subjects taught in the course embrace the following :

- 1 The derivations of the fundamental equations of spheric astronomy.
- 2 Sextant and reflecting circle :
  - (1) Theory of the instruments ; adjustments and errors.
  - (2) Determination of local time :
    - (a) By single altitudes of the sun or stars.
    - (b) By equal altitudes of the sun.



(3) Determination of latitude :

(a) By single altitudes of the sun.

(b) By circum-meridian altitudes of the sun.

(c) By altitudes of the pole star and a corresponding southern star.

3 Transit instrument :

(1) Theory of the instrument ; errors and adjustments.

(2) Time determinations by star transits, including the making of an observing list and the accurate calculations of the instrumental corrections.

(3) Reduction of a set of observations by the method of least squares.

4 Zenith telescope :

(1) Theory of the instrument ; errors and adjustments.

(2) Determination of the latitude from star observations, including the preparation of the observing list and independent determination of instrumental constants.

(3) Complete set of observations reduced by method of least squares.

5 Prime vertical instrument :

(1) Theory of the instrument ; errors and adjustments.

(2) Determination of latitude and instrumental constants.

6 Astronomic theodolite :

(1) Azimuth by observations of the pole star.

(2) Latitude and time by Gauss's "three-star method."

7 Equatorial instrument :

(1) Theory of the instrument ; errors and adjustments.

(2) Measurement of double stars with the wire micrometer.

(3) Determination of the place of a comet or a minor planet by the ring micrometer.

(4) Use of the spectroscope in studying the sun and star spectra and solar protuberances.

8 Miscellaneous :

(1) Value of level divisions obtained by means of the "level trier."

(2) Investigation of the errors of a micrometer screw.

(3) Determination of "personal equation" by Eastman's machine.

- (4) Practice in the operations of the determination of difference in longitude by the electric telegraph.
- (5) Determination of the eccentricity, errors of graduation, etc., of circles.

1, 2, 3 (1) and (2), 4 (1), 7 (1), 8 (1), are required of all students in the course. The other subjects are given out according to the ability and the time at the disposal of the student.

*Navigation* — This study is optional with the members of the senior class who have the requisite mathematical knowledge.

The class is engaged two hours a week in the lecture-room.

The text-books are the American practical navigator, by Bowditch, revised by the Bureau of Navigation, Washington, 1886, and Navigation and nautical astronomy, by Coffin. The class is required to deduce the formulæ used, and to become familiar with the practical working out of all the formulæ. The members of the class are required to make and reduce their own observations.

### Physics

The study of physics is elective with the members of the junior and senior classes.

The junior class is engaged two hours per week during the first session in the study of sound, embracing the nature of sound waves; velocity through glass, liquids and solids; reflection of sound; refraction; interference; measurement of wave-lengths; measurement of number of vibrations; vibrations of strings; musical scale; vibration of plates and bells; organ pipes, flute pipes, reed pipes; vibrations of tuning-forks determined with chronograph; Lissajous's (Bowditch's) figures; resonance; human voice; vowel sounds; consonants; the ear and audition; telephone, microphone, etc. During the second term they are employed the same length of time weekly on the subject of heat, embracing expansion of solids liquids and gases; mercurial and air thermometers; maximum and minimum thermometers; conduction of heat by solids, liquids and gases; tension of vapors; high and low pressure steam-engines; radiant heat; latent heat of liquids and gases; specific heat, etc.

During the first session three hours per week are occupied with the subject of light, embracing the topics of transmission, velocity and intensity of light; photometers; reflection and refraction of light; plane, concave and convex mirrors; spherical aberration;

prisms; total reflection; dispersion by prisms; spectroscope, chemical and solar lines; lines from fixed stars; concave and convex lenses; achromatism; camera obscura; simple and compound microscopes; astronomic and terrestrial telescopes; the eye and vision, etc.

The senior class is engaged three hours per week during the second term in studying the properties of magnets; terrestrial magnetism; magnetic attractions and repulsions; frictional electricity; theories of electricity; electrical attraction and repulsion; electrical induction; electrophorus; Holtz machine; electrical spark, nature and duration of; Leyden jar; Lichtenberg's figures, etc.; Galvani's observations; Volta's experiments; voltaic battery; constant batteries; dry piles; Oersted's fundamental experiment; tangent compass; galvanometer; Ohm's law; thermal, luminous and chemical effects; decomposition of salts; electro-metallurgy; attractions and repulsions of currents by currents; electro-magnets; chemical telegraphs; Morse telegraph; ocean telegraph; induction by magnets; magneto-electric apparatus; induction coil, etc.

Such seniors as desire it are also instructed during the first and second terms two hours per week in the mechanical theory of heat; determination of the mechanical equivalent; conversion of heat into work; application to the steam-engine; first and second laws of thermo-dynamics; isothermals; adiabatic lines; Carnot's engine, kinetic theory of gases, etc.: in electricity, including electrostatics; determination of constants of battery; measurement of resistances; theory of dynamo-electric machines; electric lighting, etc.; also in the undulatory theory of light; propagation by waves; reflection, refraction, total reflection; interference of light; Fresnel's experiments; Newton's thin plates explained by undulatory theory; thick plates explained in the same manner; double refraction in uniaxial and biaxial crystals; conical refraction; plane polarization; circular, elliptical and rotary polarization.

Text-book: Atkinson's Ganot's physics.

### Chemistry

The sophomore class attends one exercise a week in general chemistry throughout the year. The instruction is given chiefly by lectures, with the aid of Fowne's Elementary chemistry as a



text-book. The students are expected to take notes and to pass monthly examinations on the subjects taught. During the year the general principles of chemistry are expounded, and a brief elementary description is given of each of the common elements, including its history, occurrence in nature, mode of preparation, physical and chemical properties, compounds, functions in nature and uses in the arts. In addition to this, a brief outline of vegetable and animal chemistry is presented.

General chemistry is taught during the senior year also as an elective study, three times a week, by lectures and recitations, with the aid of Fowne's Elementary chemistry as a text-book. Members of the senior class who desire it are permitted to attend every afternoon in the qualitative laboratory to take a practical course in qualitative analysis.

In this course a full explanation is given of principles and details, both of inorganic chemistry and organic chemistry.

The lectures are illustrated by very complete cabinets of chemical specimens, which are constantly open for examination and study by the students.

Blow-pipe analysis and crystallography are taught during the senior year, as an elective study, twice a week by lectures and laboratory work.

### Geology and paleontology

The studies in this department are elective — geology with the members of the senior class, and botany with the members of the junior and senior classes. Those who elect them attend, in each subject, once a week throughout the year.

In geology, the seniors are instructed, during the first session, by lectures and practical exercises in cosmical and physiographic geology, and in lithology, embracing the minerals which form rocks and rock masses of the different classes. During the second session they are instructed, by lectures, in historic geology. Students are required to read, in connection with the lectures, Dana's Manual of geology.

In botany, the juniors and seniors are instructed, throughout the year, by lectures, and are required to read, in connection with the lectures, Gray's First lessons or Botanical text-book.

A geologic collection of over 100,000 specimens and a botanic collection of about 60,000 species are accessible to the students for observation and study.



### Philosophy, ethics and psychology

The subjects in which instruction is given in this department are logic, psychology, the history of philosophy, ethics and pedagogics. The courses open to under-graduates are six in number. All are elective for members of the senior class except logic and elementary psychology, which are given to the junior class, the former as a required, the latter as an elective study. These courses are merely outlined below. A special syllabus containing full and specific information in regard to the work of the department will be sent on application to the registrar.

1 *Logic and psychology*—Lectures, recitations, essays and practical exercises. Two hours weekly throughout the year. The instruction in logic is given during the first term, and is required of all students in the junior class. The instruction in psychology is given during the second term, and is elective. It must, however, be taken by all students who intend to pursue courses 2, 3, 4, 7, 8, or any of the philosophic courses in the graduate department.

2 *History of philosophy*—Lectures, essays and private reading. Two hours weekly throughout the year.

3 *Ethics*—Lectures, essays and required reading. Two hours weekly throughout the year.

4 *Advanced psychology*—Lectures, private reading and experimental work. One hour weekly throughout the year.

7 *Science of education*—Lectures, essays and private reading. One hour weekly throughout the year.

8 *History of education*—Lectures, essays and private reading. One hour weekly throughout the year.

### History, political science and international law

#### *Sophomore class*

*First term*—European history, to 1492, in Myers' *Medieval and modern history*.

*Second term*—European history, 1492–1815, *ibid.*

#### *Junior class*

*First term*—European history, since 1815, in Müller's *Political history of recent times*.

#### *Senior class*

*First term*—Constitutional history of Europe—lectures.  
Constitutional history of England—lectures.

*Second term* — Constitutional history of the United States — lectures.

Constitutional history of England — lectures.

*History* — During sophomore and the first half of junior year the course in history occupies two hours per week.

The instruction to the senior class in the history of Europe occupies four hours per week during the first term, in United States history four hours per week during the second term, and in English history two hours per week throughout the year.

### Political economy and social science

#### *Junior class*

*Second term* — Walker's Principles of political economy.

#### *Senior class*

*First term* — Historic and practical political economy — lectures.

*Second term* — Taxation and finance — lectures.

The instruction to the junior class occupies two hours per week for one term, and to the senior class three or four hours per week throughout the year.

Students who take the fourth hour are required to write an essay on some topic of political economy and read the same before the seminarium in political economy, which meets every other week throughout the year.

### Oriental languages and literature

The following courses in the department of Oriental languages and literature are optional.

#### SANSKRIT

Grammar, prescribed number of lessons. Perry's Sanskrit primer.

#### IRANIAN

Avesta. Grammar, and reading of texts. Jackson's Avesta series.

#### HEBREW

Harper's Elements of Hebrew.

Harper's Introductory Hebrew method and manual.

#### ARABIC

Socin's Arabic grammar.

Chrestomathy attached to Socin's grammar.

## ASSYRIAN

Lyon's Assyrian manual.

Original texts in the manual.

## SYRIAC

Nestle's Syriac grammar.

Selected portions of the Syriac version of the Old and New Testaments.

## RABBINIC HEBREW

Strack and Siegfried, Lehrbuch der neuhebräischen Sprache und Litteratur.

A treatise of the Mishnah.

## GRADUATE DEPARTMENT

An alumnus of this college may receive the degree of master of arts, in three years after the date of his first diploma, on passing a satisfactory examination for the same; if, however, he shall pursue a course of study for such degree for a term of at least one year in the graduate department of the college, he may at the close of such term of study receive the degree of master, on passing an approved examination on the subjects embraced in one at least of the six groups following, viz.:

Greek	Philosophy	Mathematics
Latin	Ethics	Mechanics
English	Logic	Astronomy
Physics	Constitutional law	
Chemistry	Roman law	
Geology	Comparative jurisprudence	
Any three of the languages classified generally as the Romance languages and the Germanic languages		

Bachelors of arts of other colleges, who shall have satisfied the college faculty that the course of study for which they received the bachelor's degree is equivalent to that for which the bachelor's degree is given in Columbia College, or shall have passed such examination as the faculty may prescribe, may be admitted to the degree of master of arts, on the same terms and conditions as are prescribed for the admission of bachelors of arts of Columbia College to the same degree.

Candidates will be allowed to offer for examination any one or more of the books or subjects named in the following list, in each of the three departments belonging to the group elected by them, viz.:

### First group

#### GREEK

- |                                |                                |
|--------------------------------|--------------------------------|
| 1 Aristotle :                  | Æschines and Demosthenes :     |
| Ethics ; or                    | De Corona ; or                 |
| Politics ; or                  | De Falsa Legatione.            |
| Rhetoric and poetry.           |                                |
| Plato :                        | Thucydides :                   |
| Gorgias ; or                   | Two books.                     |
| Three books of the Republic,   |                                |
| or other portions equal in ex- | The orations of                |
| tent (made by approval).       | Antiphon and Andocides ; or of |
| Pindar :                       | Lysias ; or of                 |
| Olympic and Nemean Odes ; or   | Isæus.                         |
| Pythian and Isthmian Odes.     | The Poems of Hesiod.           |
| Æschylus, two plays ; or       |                                |
| Sophocles, two plays.          | Theocritus, Bion and Mos-      |
|                                | chus.                          |

No book to be offered which has formed part of the reading of the candidate during the undergraduate course.

#### 2 Greek inscriptions and archeology.

#### LATIN

##### 1

- |                            |                         |
|----------------------------|-------------------------|
| Suetonius :                | W. Capes :              |
| The lives of Julius Cæsar, | The Early Roman empire. |
| Augustus and Tiberius.     |                         |

##### 2

- |                              |                              |
|------------------------------|------------------------------|
| Lucretius :                  | W. Sellar :                  |
| The first three books of the | Roman poets of the republic. |
| De rerum natura.             |                              |

##### 3

- |                                  |                       |
|----------------------------------|-----------------------|
| Cicero :                         | C. Merivale :         |
| The first and second Philippics. | Fall of the republic. |

##### 4

- |                              |                        |
|------------------------------|------------------------|
| Plautus :                    | C. F. W. Müller :      |
| The Captivi and mostellaria. | Plautinische prosodie. |



## 5

Aulus Gellius :

C. T. Cruttwell :

The first three books of the History of Roman literature.  
Noctes Atticæ.

## ENGLISH LITERATURE

- 1 Gothic grammar, with reading of prescribed portion of Ulfilas.
- 2 Béowulf, with examination on inflection and syntax of Anglo-Saxon words.
- 3 Any great classic of the English language, of prescribed extent, in connection with life of author, with analysis of the work itself, with minute study of the style, and with explanation of rhetorical figures and historical and other allusions.

## Second group

## PHILOSOPHY, ETHICS AND LOGIC

The history of ancient philosophy.

Zeller's Geschichte der griechischen philosophie.

Ueberweg's History of philosophy, vol. 1.

Schwegler's History of philosophy.

Erdmann's Geschichte der philosophie.

Or

The history of medieval and modern philosophy.

Zeller's Geschichte der deutschen philosophie.

Ueberweg's History of philosophy, vol. 2.

Schwegler's History of philosophy.

Harms's Die deutsche philosophie seit Kant.

Kuno Fischer's Geschichte der neuen philosophie.

Stöckl's Geschichte der neuen philosophie.

Or

A special acquaintance with the system of some important philosopher or school ; the choice of such system to be subject to the approval of the professor.

- 2 Psychology. A knowledge of the psychologic theories of at least two different contemporary schools or philosophers.

Herbert Spencer's Psychology.

Bain's Senses and intellect.

Sully's Outlines of psychology.

Volkmann's Psychologie.

3 Logic. Any one of the following works or its equivalent:

Mill's System of logic.  
 Ueberweg's System of logic.  
 Jevons's Principles of science.  
 Lotze's Logic.  
 Bradley's Principles of logic.  
 Hamilton's Logic.  
 De Morgan's Logic.

4 Ethics. Any one of the following works or an equivalent.

Sidgwick, the Methods of ethics.  
 Spencer, the Data of ethics.  
 Wilson and Fowler, Principles of morals.  
 Green, Prolegomena to ethics.  
 Von Hartmann, Phänomenologie des sittlichen Bewusstseins.  
 Calderwood's Moral philosophy.  
 Martensen's Ethics.  
 Martineau's Types of ethical theory.

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### Third group

#### MATHEMATICS

- 1 Determinants.
- 2 Modern co-ordinate geometry.
- 3 Modern synthetic geometry.
- 4 Theory of equations.
- 5 Higher calculus.
- 6 Differential equations.
- 7 Calculus of variations.

#### MECHANICS AND ASTRONOMY

- 1 Analytic mechanics.
- 2 Spheric astronomy.

#### PRACTICAL ASTRONOMY

- 1 Chauvenet's Spheric and practical astronomy.
- 2 Watson's Theoretic astronomy.
- 3 Work in the observatory — observing and reducing observations.

**Fourth group**

## PHYSICS

- 1 Maxwell, Theory of heat.
- 2 Fleeming Jenkin, Electricity.
- 3 H. Lloyd, Wave theory of light.
- 4 Schellen, Spectral analysis.
- 5 H. Helmholtz, Tonempfindungen ; English translation.

## CHEMISTRY

- 1 Roscoe and Schorlemmer, Treatise on chemistry.
- 2 Hoffman, A. W., Introduction to modern chemistry.
- 3 Cooke, Josiah P., The new chemistry.
- 4 Day, C. E., Chemistry in its relations to physiology and medicine.
- 5 Thudicum, J. L. W., Annals of chemical medicine.
- 6 Valentine — Hodgkinson, Qualitative chemical analysis.
- 7 Cairns, Quantitative analysis.
- 8 Wagner, Handbuch der chemische technologie.

## GEOLOGY

- 1 General geology —  
Lyell, Principles of geology.  
Von Cotta, Die geologie der Gegenwart.  
Green, Physical geology.
- 2 Applied geology —  
Page, Economic geology.  
Burat, Geologie appliqué.  
Von Cotta and Prime, Ore deposits.  
Phillip, Ore deposits.
- 3 Paleontology —  
Nicholson, Paleontology.  
D'Orbigny, Paleontologie élémentaire.  
Owen, Paleontology.  
Zittel, Paleontologie.
- 4 Lithology —  
Dana Manual of lithology and mineralogy.  
Von Cotta and Lawrence, Rocks.  
Jannetaz, Ed., Les Roches.  
Rosenbusch-Iddings, Rock-making minerals.

## Fifth group

## CONSTITUTIONAL LAW

- 1 Cox, English institutions.
- 2 Von Rönne, Das deutsche Staatsrecht.
- 3 Duvergier de Hauranne, Histoire parlementaire de France.
- 4 Von Holst, Constitutional history of the United States.
- 5 Laurent, Histoire du Droit des gens.
- 6 Ghillany, Das diplomatische handbuch.
- 7 Wheaton, History of international law.
- 8 Bluntschli, Lehre vom modernen staat.
- 9 Woolsey, Political science.
- 10 Bowyer, Public law of England.

## ECONOMICS

- 1 The principles of political economy, either J. S. Mill, Principles of political economy, or Wm. Roscher, Principles of political economy.
- 2 The History of political economy, either Blanqui, Histoire de l'économie politique, or Kautz Geschichte der nationalökonomie.
- 3 One of the following special subjects, viz. :
  - (a) Finance, W. S. Jevons, Money and the mechanism of exchange, together with B. Price, Currency and banking.
  - (b) Commerce, Leone Levi, History of British commerce, and H. Fawcett, Free trade.
  - (c) Socialism, Schäffle, Kapitalismus und socialismus.

## HISTORY

The candidate will be expected to present himself for examination in the general history of one of the following countries: Rome, England, Germany, France or the United States.

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## Sixth group

## ROMANCE LANGUAGES AND LITERATURES

Any of the courses indicated below, or any approved combination of three subjects selected from different courses.

- 1 Lectures (two hours a week) on study of Romance literature, with course of readings, assigned, and special study of some language of the Romance group.



## 2 French literature —

The 17th century in French literature — The classic school.

1 The drama — Corneille, Racine, Molière.

2 Poetry, eloquence — Lafontaine, Boileau, Bossuet, Fénelon.

3 History, memoirs, philosophic writings — Cardinal de Retz, Duc de St Simon, Descartes, Pascal, La Bruyère.

Recommended as manual: D. Nisard — *Histoire de la littérature Française*, vols. 2 and 3.

## 3 Romance philology —

1 Old French morphology and syntax, with a critical study of *La Chanson de Roland*, or *Ville* — Hardouin's *Conquête de Constantinople*.

2 In *Diez' Romanische grammatik*: comparative grammar of French, Italian and Spanish, or Provençal.

3 Italian, Spanish, Portuguese or Provençal.

## GRADUATE DEPARTMENT COURSES FOR 1890-91

## GREEK

Selections from the authors named in the plan of study for the degree of master of arts; twice a week.

Greek inscriptions and archeology; once a week.

Syntax of moods and tenses.

Lectures on Greek literature.

## LATIN

1 Rapid reading of Plautus and Terence; once a week for half the year.

2 Catullus and Propertius; once a week for half the year.

3 Original composition in Latin prose and verse; once a week throughout the year.

4 Patristic Latin: Tertullian; once a week throughout the year.

5 The Jurists: Gaius, Ulpian, and the Digest; once a week throughout the year.

6 Preparation of original papers on subjects connected with the above courses.

## SANSKRIT

(a) *Course for beginners:*

Text-books: Perry's Sanskrit primer, Lanman's Sanskrit reader, and Whitney's Sanskrit grammar. During the year it is hoped to finish the primer and read 60-70 pp. in the reader. Two hours a week.

(b) *Course for advanced students:*

This is also a course of two hours a week, and in it will be read either selections from Vedic texts or from the more difficult works of the classic period. For this course some knowledge of German is desirable.

(c) *Lectures on Sanskrit literature:*

During part of the year, one hour weekly.

## BIBLICAL HEBREW

(a) *Elementary Hebrew:*

Harper's Elements of Hebrew (8th ed.) will be used during both terms in conjunction with Harper's Introductory Hebrew method and manual (3d ed.). Two hours a week.

(b) *Advanced Hebrew:*

This class will study during the first term, 1 Samuel, ch. 1-20, with continued reference to Gesenius, Hebräische grammatik (25th ed.), Stade, Lehrbuch der Hebräischen grammatik and Driver, Treatise on the use of the tenses in Hebrew (2d ed.). During the second term the class will read critically the book of Hosea. Two hours a week.

## RABBINIC HEBREW

(a) Mishnah, treatise Yoma (on the ritual of the day of atonement), with selections from the Talmud thereto. Two hours a week.

(b) Palestinian Talmudh, treatise Berakhoth, with special reference to the orthography and etymology of the Palestinian Aramaic dialect. Two hours a week.

(c) Selected portions of the first part of the philosophic work More Nebhukhinr (guide of the perplexed) by Moses ben Maimon, with introductory lectures on the Arabian-Jewish philosophy of the middle ages. Two hours a week.

[Books of reference: R. I. Fürstenthal, Doctor perplexorum; Krotoschin, 1839; S. Munk, Le guide des égarés tome premier, Paris, 1856; M. Friedländer, The guide of the perplexed, London, 1885.]

(d) The commentary of David Kimhi on the Psalms. One hour a week.

(e) Selections from the poems of Abu'l-Hassan Yehudah Hallewi. Text-book: Geiger, Divan des Castiliens Abu'l-Hassan Juda Ha-Levi, Breslau, 1851. One hour a week. S. Philipp, Beth Habbehirah, part 1, Lemberg, 1888.

## SYRIAC

(a) *First course.* Two hours a week.

The principles of Syriac grammar will be studied, combined with exercises in reading and translating from the Peshitta version of the Old and New Testaments. Books of reference: Nöldeke, *Kurzgefasste Syrische grammatik*, Leipzig, 1880; Duval, *Traité de grammaire Syriaque*, Paris, 1881; Nestle, *Brevis linguæ Syriacæ grammatica*, Carlsruhe, 1881.

(b) *Second course.* Two hours a week.

Reading of Kalilag and Damnag, the Syriac translation of the Indian book of fables. Introductory lectures on Syriac literature and the history of the Nestorians, Jacobites, Maronites and Malabar Syrians. This course is intended only for those who are able to read unvocalized texts. Text-book: Kalilag und Damnag, text von Gustav Bickell mit einer Einleitung von Theodor Benfey, Leipzig, 1876. Lexicons: Edmundi Castelli, *Lexicon Syriacum*, curavit, Joannes David Michaelis, Göttingen, 1788; Payne-Smith, *Thesaurus Syriacus*, Oxford, 1879-86; Hoffman, *Syrisch-Arabische Glossen*, Kiel, 1874.

## ARABIC

(a) *Elementary Arabic.* Two hours a week.

During both terms the class will carefully study the grammar in conjunction with easy readings selected from the *Chrestomathy* in Socin's Arabic grammar, and Arnold's *Chrestomathia Arabica*.

(b) *Advanced Arabic.* Two hours a week.

During the first term the class will read selections from Ibn Hishām's *Life of Mohammed* (ed. Wüstenfeld, 1859); during the second term, either the *Moallakah* of 'Amru'l kais (Arnold, *Septem Moallakāt*, Lipsiae, 1850), or portions of the grammatical work *Al-Mufasssal* (2d ed.).

## ASSYRIAN

Two hours a week.

(a) Text-books: Lyon's Assyrian manual, Delitzsch's *Assyrische Lesestücke* (3d ed.). The first term will be devoted to a study of the syllabary and the general outline of Assyrian grammar. In the second term some of the less difficult historic texts will be carefully studied.



(b) Lectures on the general history and antiquities of Assyria-Babylonia. One hour a week. These lectures will discuss the following points :

- 1 History of the finding and deciphering of the inscriptions.
- 2 General political history from native and classical sources.
- 3 Private life.
- 4 Literature, arts and sciences.

## SEMITIC PALEOGRAPHY

Two hours a week.

The lectures do not include the Assyrian and Babylonian. They will treat of the following subjects : 1 Origin and history of the different Semitic alphabets ; 2 The Aramaic inscriptions of Assyria, Asia Minor and Egypt ; 3 The inscription of King Mēshā of Moab ; 4 Hebrew legends on seals and coins, the Siloa inscription, the Maccabæan, Idumæan, and Bar Kokhba coins ; 5 Outline of Phœnician history, the Pœnulus of Plautus, the inscriptions of Sidon (Eshmunzar), Um el-awamīd, Gebal, Cyprus, Athens, Malta, Sicily, Kossura, Preneste, Marseilles, Sardinia, Spain, Africa, Egypt, the Neo-Punic inscriptions ; 6 Outline of the history of Palmyra, Palmyrene inscriptions on seals, gravestones, etc., the *νόμος τελωνικός* ; 7 The Syriac inscriptions of Edessa, Karyetēn, China, and Semiryetchi ; 8 The Nabatæan inscriptions of Haurān, Petra, Taima ; 9 The Sabæan (Himyaritic) inscriptions of southern Arabia (Sabæan Proper and Minaic) ; 10 The Ethiopic inscriptions of the Axum ; 11 The Arabic inscriptions of the Hig'āz, the trilingual of Zabed, the bilingual of Harrān.

Text-books, Corpus inscription. Semiticarum, vols. 1, 2. Paris, 1881-90. De Vogüé, Syrie centrale, inscriptions Semitiques, Paris, 1868-77. Euting, Nabatäische inschriften aus Arabien, Berlin, 1885.

## ETHIOPIC

(a) *First course.* One hour a week.

Prætorius, Äthiopische grammatik, Part 7, of the Porta linguarum Orientalium. N. Y., Westermann, 1886.

(b) *Second course.* One hour a week.

Dillmann Grammatik der Äthiopischen Sprache. Leipzig, 1887. Liber Henoch Æthiopice ; cura Augusti Dillmann. Leipzig, 1851.



## IRANIAN LANGUAGES

- (a) *Avestan (for beginners)*. One or two hours a week.

Text-book: Jackson's Avesta series: Part 1 grammar; part 2 texts. The first term will be devoted to acquiring a knowledge of the grammar, constant reference being made to the corresponding forms in Sanskrit. The second term will be spent in reading selections from the Avesta, attention being paid to the laws for the metrical construction of the text wherever possible.

- (b) *Avestan (advanced course)*. Two hours a week.

This course will provide for a more extended study of the Avesta, chiefly according to the "comparative" method, not neglecting, however, the so-called "traditional school" of interpretation. Special time will be spent on the Gāthās.

- (c) *Old Persian cuneiform inscriptions*. One hour a week.

Text-book: Spiegel's Die Altpersischen Keilinschriften. This course is to run parallel with the advanced Avestan; and in both Bartholomæ's Handbuch der Altiranischen Dialekte will also be needed.

- [(d) *Pehlevi*.

An introduction into this language will be given in connection with the second course; and a number of Avestan selections with the Pehlevi translations will be studied side by side.

Text-book: C. de Harlez' Manuel du Pehlevi.]

- (e) *New Persian*: Sketch of the grammar and interpretation of selected passages from the Shāh Nāmāh in connection with the Avesta.
- (f) *Grammar of the Iranian languages*. If desired, a course in the general grammar and history of the Iranian languages will be given. Special reference will be made to the relative position of the Armenian.
- (g) *Lectures on the general history, religion and literature*. Among the subjects are: (1) Zoroaster and his teaching; (2) Passages from the classic authors, Herodotus, etc., interpreted in the light of the Avesta and old Persian inscriptions; (3) The literary records of ancient Persia.

## ENGLISH LANGUAGE AND LITERATURE

Course of lectures on Gothic grammar and the relation between the Teutonic and the other Indo-Germanic languages. Course of reading in Ulfilas, Béowulf, and the leading writers of the early

English and middle English period. Preparation of thesis on some point of Teutonic philology, or of English literature or philology.

## ROMANCE LANGUAGES

Lectures on the history, phonology, morphology, dialectology and comparative grammar of the Romance languages, and lectures on literature. Courses, philological and literary, in old French, Provençal, Catalan, Portuguese, Wallachian and Raetoroman. Seminar in philology and literature.

## GERMANIC LANGUAGES

Lectures on the history, philology, morphology and comparative grammar of the Germanic languages. Lectures on literature. Courses, literary and philologic in Gothic, Old High German, Middle High German, Low German, Dutch, Icelandic, Swedish, Danish. Seminar in philology and literature.

## PHILOSOPHY AND PEDAGOGICS

The courses for graduates presuppose a knowledge of courses 1, 2 and 3, offered to undergraduates (see under department of instruction "Philosophy, ethics and psychology"). Those at present offered are outlined below. A special syllabus containing full and detailed information regarding the various courses in philosophy and pedagogics, will be sent on application to the registrar.

5 — *The philosophy of Kant and the later German development.* Lectures and theses. Two hours weekly throughout the year.

6 — *English philosophy from Locke to Herbert Spencer.* Lectures and theses. Two hours weekly throughout the year.

7 — *Science of education.* Lectures and theses. One hour weekly throughout the year.

8 — *History of education.* Lectures and theses. One hour weekly throughout the year.

9 — *Advanced ethics.* Lectures and theses. Two hours weekly throughout the year.

10 — *Practical ethics.* Lectures, theses and the study of institutions. Two hours weekly throughout the year.

11 and 12 — *Experimental psychology.* Lectures and laboratory work. Each course two hours weekly throughout the year.

- 13 — *Higher logic and scientific method.* Lectures, theses, and practical exercises. One hour weekly throughout the year.
- 14 — *Seminarium.* For the discussion and investigation of special problems. One or two hours weekly throughout the year.

## HISTORY AND POLITICAL ECONOMY

Courses the same as those in the school of political science, for the particulars of which see courses of that school.

## MATHEMATICS

Selections from the subjects named in the plan of study for the degree of master of arts: twice a week.

## PHYSICS

Methods of research in physics, with laboratory work: twice a week.

## MATHEMATICS AND ASTRONOMY

Selections from the subjects named in the plan of study for the degree of master of arts: twice a week.

## PRACTICAL ASTRONOMY

Selections from the subjects named in the plan of study for the degree of master of arts, with work in the observatory.

## CHEMISTRY

Analytical chemistry, with laboratory work: daily.

Theoretic chemistry: three times a week.

Applied chemistry: twice or six times a week.

Biology and the use of the microscope: twice a week.

## GEOLOGY

Cosmic physiographic, and historic geology: three times a week.

Economic geology: twice a week.

## MINERALOGY

Practical mineralogy, with determination of specimens: twice a week during the first term, with blow-pipe analysis twice a week during the second term.

Blow-piping: twice a week for one term.

Crystallography: twice a week for one term.

## FRESHMAN CLASS

FIRST TERM	SECOND TERM
<p>Homer's Odyssey — three books  Greek prose composition  Greek scanning and prosody  Odes and Epodes of Horace  Latin prose composition  Latin syntax and prosody  Sight reading of Latin  Geometry and use of logarithmic tables  English grammar and analysis  Poets and prose writers of present time  Rhetoric and practical exercises in English composition  History of English literature  One modern language</p>	<p>Herodotus: sixth and seventh books  Greek prose composition  Cicero: De senectute et De amicitia or Quintus Curtius  Latin prose composition  Sight reading of Latin  Algebra  English grammar, and analysis  History of English literature  Contemporary poets  Rhetoric and practical exercises in English composition  One modern language</p>



## SOPHOMORE CLASS

FIRST TERM	SECOND TERM
<p>Medea, Alcestis, Hippolytus, or Iphigenia in Tauris of Euripides</p> <p>Greek composition</p> <p>Epistles and Ars poetica of Horace</p> <p>Review of Latin prosody</p> <p>Sight reading</p> <p>Plane, analytic and spheric trigonometry</p> <p>General chemistry</p> <p>Historic English grammar</p> <p>History of the English language</p> <p>Poetry of Shakspeare</p> <p>Rhetoric and practical exercises in English composition</p> <p>History of English literature</p> <p>European history</p> <p>One modern language</p>	<p>Xenophon's Memorabilia two books, or Thucydides sixth and seventh books; Greek composition, prose and verse</p> <p>Livy: the first and fourth books; Latin prose composition</p> <p>Sight reading of Latin</p> <p>Spheric trigonometry; mensuration; surveying</p> <p>General chemistry</p> <p>Historic English grammar</p> <p>History of the English language</p> <p>Poetry of Shakspeare</p> <p>Rhetoric and practical exercises in English composition</p> <p>History of English literature</p> <p>European history</p> <p>One modern language</p>

## JUNIOR CLASS

FIRST TERM	SECOND TERM
<p>A drama of Sophocles; scanning and prosody  Select idyls of Theocritus, or selection from the lyric  or dramatic poets, or Theognis  Juvenal and Persius; composition in Latin verse  The Heauton Timorumenos of Terence  Verse composition  Analytic geometry  Sound  Botany  Anglo-Saxon grammar; history of literature; prose  of Bacon; poetry of Milton and Spenser; rhetoric  and practical exercises in English composition  Logic  European history  Modern languages</p>	<p>A dialogue of Plato, the Philipppics of Demosthenes,  or select orations of Lysias or of Isocrates; Greek  prose composition  Hesiod, the Work and days, or the Theogony  Cicero: The Tusculans, or De officiis; Latin prose  composition and orthography  Ovid: Selections from the Heroides, Fastes and  Tristia  Mechanics  Magnetism; electricity  Botany  Anglo-Saxon grammar; history of literature; prose  of Bacon; poetry of Milton and Spenser; rhetoric,  and practical exercises in English composition  Psychology  Political economy  Modern languages</p>

## SENIOR CLASS

## FIRST TERM

Two dramas of Æschylus, or the Olympic or Pythian Odes of Pindar; choral scanning  
 Plautus: The Trinummus; archaic Latin; comparative philology  
 Lucan: The Pharsalia; lectures on Roman life and manners  
 Differential calculus  
 Astronomy. Practical astronomy. Navigation  
 Light. Higher physics  
 Chemistry. Qualitative analysis — laboratory work  
 Botany  
 Geology and lithology. Blow-pipe analysis  
 Historic grammar of English language; reading from the authors of 12th, 13th and 14th centuries; departments of literature and philosophy of criticism; study of composition and practical exercises in essay-writing  
 Psychology; history of philosophy  
 Philosophical essays  
 Constitutional history of Europe  
 Constitutional history of England  
 Political economy  
 Sanskrit  
 Modern languages. Comparative literature

## SECOND TERM

Æschines or Demosthenes, Oration on the crown; or portions of the Ethics or Politics of Aristotle; or of the Republic of Plato; history of Greek literature; elements of comparative philology  
 Quintilian's Institutes; Latin inscriptions; and lectures on historic grammar  
 Integral calculus  
 Astronomy. Practical astronomy. Navigation  
 Heat. Higher physics  
 Chemistry. Qualitative analysis — laboratory work  
 Botany  
 Geology and lithology. Blow-pipe analysis  
 Historic grammar of English language; reading from the authors of 14th, 15th and 16th centuries; departments of literature and philosophy of criticism; study of composition and practical exercises in essay-writing  
 Psychology; history of philosophy  
 Philosophical essays  
 Constitutional history of United States  
 Constitutional history of England  
 Political economy  
 Sanskrit  
 Modern languages Comparative literature

## REQUIREMENTS FOR GRADUATION

1 Each candidate shall, after consultation with the professor of one of the departments in which he studies, select for a thesis, or essay, some subject connected with the department, and by some date to be prescribed by the president, shall submit the title of such thesis, or essay, for the president's approval. If the title be approved, the student shall write and submit to the president, by the 15th of March, a thesis or essay of his own composition, which shall be examined, as the president shall direct, both for literary form and for thought and method. Each essay shall contain as appendix a list of all books, essays, etc., that have been used as authorities. If it be not submitted as ordered above, or if it be on any ground rejected as unfit, the student that thus fails shall not be recommended to the trustees for graduation.

2 No thesis will be accepted which shall occupy less than eight minutes in reading, at the ordinary rate of effective delivery.

3 The graduating theses are to be retained by the college.

## NON-RESIDENT CANDIDATES FOR A DEGREE

Teachers and others engaged in indispensable occupations which interfere with class hours may become candidates for the degree of bachelor of arts without being held to attendance on class exercises, under the following conditions:

Every such candidate must

1 Fully satisfy the requisitions prescribed for entrance to college, and must matriculate as a member of the class which he is found qualified to enter.

2 Show evidence that the occupation in which he is engaged is one which he can not relinquish without serious disadvantage.

3 Pay the usual matriculation and tuition fees.

4 Present himself for examination with his class at the semi-annual examinations, and at such other times as may be appointed by the faculty.

Such candidates are entitled to receive from members of the faculty such advice and assistance as may be necessary to guide them in their studies.

## CANDIDATES FOR HIGHER DEGREES

1 Persons not candidates for a degree, whether graduates or not, may attend any of the graduate courses for which they may be qualified, on payment of the proper fees.



2 Students in the graduate department, who fulfill the following conditions, will be recommended to the trustees for a higher degree :

(a) Each candidate shall pursue, for at least one academic year for the degree of master of arts, and for at least two academic years for the degree of doctor of philosophy, science or letters, a course of higher study, in the graduate department and under the direction of the faculty, in three or more cognate departments of study, and shall pass an approved examination thereon.

(b) Before examination, the candidate must produce certificates from the heads of the departments in which he has pursued his graduate studies, that he has been regular in attendance and faithful in the work assigned.

(c) Candidates for the doctor's degree must also present an acceptable thesis or dissertation embodying the results of special study, research, or observation, on a subject previously approved by the officers of instruction with whom he has studied.

(d) Candidates for any of these degrees must give a month's notice to the professors who are to conduct the examinations, and must arrange with them the time and exact subject of such examination.

BUILDINGS

(Facts not reported)

ADDITIONAL INFORMATION

COURSES OPEN TO SENIORS OF THE SCHOOL OF ARTS AND OTHER STUDENTS OF LIKE PROFICIENCY

The following courses of instruction are offered for the year 1890-91, to students who have completed a course of undergraduate study in the school of arts, or in some other college maintaining an equivalent course of study, to the end of the junior year :

	HOURS PER WEEK
Political and constitutional history of Europe and the United States .....	4
Political and constitutional history of England.....	2
Historic and political geography of Europe .....	1
Relations of England and Ireland. First session.....	1

	HOURS PER WEEK
Political history of New York . . . . .	1
Historic and practical political economy . . . . .	3 or 5
Financial history of the United States . . . . .	2
History of political theories { First session . . . . .	2
{ Second session . . . . .	3

Students who shall satisfactorily complete a selection of the above courses, amounting in all to 15 hours per week, shall be qualified, on examination and the recommendation of the faculty, to receive the degree of bachelor of philosophy ; or, with the concurrence of the faculty of arts, the degree of bachelor of arts.

Students who shall satisfactorily complete a selection of the above courses, amounting in all to less than 15 hours per week (the remaining portion of the prescribed number of hours having been taken under the direction of another faculty), shall, after examination, be entitled, with the concurrence of such other faculty or faculties and with the consent of the president, to receive the degree of bachelor of philosophy; or, with the further consent of the faculty of arts, that of bachelor of arts.

### COURSES OF INSTRUCTION OFFERED FOR 1890-91

During the academic year, 1890-91, the following program of courses is offered to students pursuing their studies wholly or in part under the jurisdiction of the university faculty of philosophy:

## Department of philosophy

		HOURS PER WEEK
Course 2	General history of philosophy . . . . .	2 or 3
" 3	Ethics . . . . .	2
" 4	Experimental psychology . . . . .	2
" 6	Modern British philosophy . . . . .	2
" 8	Pedagogics . . . . .	2
" 9	Advanced ethics . . . . .	2
" 14	Philosophical seminar . . . . .	2

## Department of Greek

Course	1	Lectures on Greek literature, the gnomic, iambic, and melic poets . . . . .	1
"	2	Æschylus or Pindar, Demosthenes . . . . .	1 or 2
"	3	The New Testament . . . . .	1 or 2

Course 4	The 10 Attic orators; the development of Attic prose; and lectures on the Athenian constitution and court procedure; writing Greek .....	2
"	5 Archeology and epigraphy; history of the Greek alphabets to 400 B. C., and of the dialects as exhibited by the inscriptions of period; Roberts' Introduction to Greek epigraphy; lectures on the sculptures and other objects of art connected with the inscriptions read .....	2

*Department of Latin*

Course 1	A critical study of the Menæchmi of Plautus with the comic prosody, and history of Roman comedy — <i>first term only</i> .....	2
"	2 The first two books of Suetonius, with parallel reading of Plutarch, Dio Cassius and Velleius Paterculus — <i>first term only</i> .....	1
"	3 Lectures on Roman literature (ante-classical period) .....	1
"	4 Ovid: rapid reading of the Heroides, Metamorphoses, and Tristia — <i>second term only</i> ...	1
"	5 Early Latin — <i>second term only</i> .....	1
"	6 Lucretius and Roman Epicureanism; lectures and theses .....	1
"	7 Catullus and Propertius, with a critical study of Latin prosody and versification .....	1
"	8 Patristic Latin: Tertullian De Spectaculis, de Corona Militis, and the Apologeticus .....	1
"	9 Juristic Latin: the Institutes of Justinian .....	1
"	10 Seminar: preparation and criticism of original papers.— Subject for investigation in 1890-91; the Sermo Plebeius, as exhibited in Lucilius, Horace, Persius, the Bellum Africanum, the Bellum Hispaniense, the Bellum Alexandrinum <sup>e</sup> ; and in the Satyricon of Petronius .....	1

*Department of English*HOURS  
PER WEEK

Course 1	Historic course: the development of the English language from the 12th to the 16th century .....	2
" 2	Literary course: the form and departments of English prose, and the prose literature of the 19th century, English and American. ....	2
" 3	Literary course: the form and departments of English poetry, and the poetic literature of the 19th century, English and American. ....	2
" 4	Development of English prose from the end of the Anglo-Saxon period to Dryden. ....	2
" 5	Development of English poetry from the end of the Anglo-Saxon period to Shakspeare. ....	2
" 6	Historic grammar of Anglo-Saxon and English	2
" 7	History of rhetoric and its literature, including the Greek, Roman, Arabic, Jewish and Hindoo systems and writers, and comprising an analysis of the works and methods of English teachers of rhetoric since Thos. Wilson. ....	1
" 8	Anglo-Saxon poetry and prose. ....	2
" 9	The Anglo-Saxon epic poetry; lectures on the literature. ....	2
" 10	Archaic and dialectic Anglo-Saxon; Runic monuments; lectures on language and grammar. ....	2

*Department of the Germanic languages*

Course 1	Goethe's Faust, first and second parts, with commentary .....	2
" 2	History of German literature; lectures. ....	2
" 3	Danish .....	1
" 4	Swedish. ....	1
" 5	History of Danish and Norwegian literature; lectures .....	1
" 6	Seminar, for the critical study of special periods in German literature .....	1
" 7	History of the German language; lectures. ....	1



Course	8	Icelandic, elementary course: Sweet, Icelandic primer; Vigfusson and Powell, Icelandic prose reader .....	2
"	9	Gothic: Braune, Gothic grammar; Douse, Introduction to the Gothic of Ulfilas .....	1
"	10	Middle high German, elementary course: Wright, Middle high German primer; Weinhold, Mittelhochdeutsches Lesebuch .....	1
"	11	Icelandic advanced course: Noreen, Altisländische u. Altnorwegische grammatik; Wilken, Die prosaische Edda .....	2

*Department of the Romance languages*

Course	1	Philosophy of literature; lectures .....	1
"	2	French literature, from its origin to the 17th century; lectures .....	2
"	3	The French literature of the 17th century; lectures .....	2
"	4	Literary and grammatic criticism of modern French authors .....	2
"	5	French literature of the 18th and 19th centuries; lectures .....	2
"	6	Old French phonology, morphology and syntax, .....	2
"	7	Comparative grammar of the Romance languages, .....	2

*Department of Sanskrit*

Course	1	Sanskrit, elementary course .....	3
"	2	Exercises in Vedic grammar, with interpretation of easy hymns of the Rig-Veda .....	1
"	3	Introduction to the study of language .....	2
"	4	Interpretation of more difficult Vedic texts .....	2

*Department of the Iranian languages*

Course	1	Avesta: grammar and reading of texts .....	1 or 2
"	2	Avesta: advanced study of the grammar; interpretation of texts; antiquities and literature ..	2
"	3	(a) Old Persian inscriptions and (b) Pahlavi; introduction to each of these languages .....	1 or 2
"	4	Zoroaster and his teaching; lectures .....	1

*Department of Semitic languages*

		HOURS PER WEEK
Course 1	Biblical Hebrew, elementary course . . . . .	2
" 2	Biblical Hebrew, second course . . . . .	2
" 3	Biblical Hebrew, advanced course . . . . .	2
" 4	Rabbinic Hebrew; Mishnah treatise Yoma . . . . .	2
" 5	Rabbinic Hebrew; Palestinian, Talmudh, treatise Berakhoth . . . . .	2
" 6	Rabbinic Hebrew; Maimonides' Guide of the perplexed; lectures on the Arabian-Jewish Philosophy of the middle ages . . . . .	2
" 7	Semitic paleography, not including the Assyrian and Babylonian . . . . .	2
" 8	Assyrian, general course; lectures . . . . .	1
" 9	Arabic, first course . . . . .	2
" 10	Syriac, first course . . . . .	2
" 11	Ethiopic, first course . . . . .	1

## THE SCHOOL OF ARTS

May 31, 1890 the faculty of the School of Arts resolved that such courses in philosophy, philology and letters, in mathematics and in pure and applied sciences, in private law, and in history and political science as might be designated by the faculties of the various departments of the university as open to students who have completed a course of undergraduate study to the close of the junior year in the School of Arts or in any other college maintaining an equivalent curriculum, be recognized as elective studies in the senior year; and that when a student avails himself of any of these privileges, it shall be the duty of the dean of the School of Arts to make certain that such student takes not less than 15 hours per week in obligatory attendance upon lectures and recitations.

April 7, 1890 the trustees established the Alumni competitive scholarship as a prize to the student who is examined at the college in June and who passes the best complete entrance examination in all subjects to the School of Arts.

This scholarship consists of exemption from tuition fees during the whole college course, providing the holder maintains a satisfactory standing. All privileges, including the right of competi-

tion for any or all prizes offered during the college course, are open to the holder of this scholarship.

Samuel P. Avery and Mary A. Avery purpose to establish in Columbia College the Avery Architectual Library in memory of their son, Henry Ogden Avery. The gift is to include the collection of books relating to architecture and the decorative arts formed by the late Henry O. Avery, including one or more folios of his original architectural drawings; a sum not exceeding \$15,000 to pay for books purchased before January 1, 1890; \$15,000 to be invested as a permanent fund, the interest of which is to be used in making necessary repairs and in the purchase of books. The books forming the Avery Architectual Library are to be kept in a separate room or alcove as a library of reference only.

From time to time a separate catalogue of this library is to be printed in pamphlet form at the expense of the college, and sufficient number for free distribution to architects, students of art, and other persons or institutions to whom the Avery Architectual Library may be useful.

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Extract from the will of Charles M. Da Costa, an alumnus of the class of 1855 and a trustee of the college, who died June 22, 1890:

“First—I give and bequeath to the trustees of Columbia College in the city of New York the sum of \$100,000. I express the hope that such sum may be used for the endowment of some new professorship, which in the good judgment of the board of trustees, may be needed in any of the schools or departments of the college. But this expression of mine is in no way to limit the absolute right of the said corporation to use the said sum for any of its corporate purposes. I also give and bequeath to said corporation my library, both law and miscellaneous.”

## UNION UNIVERSITY

## CONSISTING OF

Union College	Albany College of Pharmacy
Albany Law School	Dudley Observatory
Albany Medical College	

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
10 Ap	1873	Legislature incorporated Union University.
12 Je	"	Agreement made that number of governors should consist of '13 in addition to the four presidents. University to appoint a permanent and an honorary chancellor. President of Union College ex-officio permanent chancellor who confers all degrees.
31 O	"	Regents approved above agreement.
21 Je	1881	Governors (act of 10 Ap 1873) created Albany College of Pharmacy.
12 Jl	"	Above college recognized by regents as a department of the University.

## UNION COLLEGE

*Schenectady*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

21 F	1785	Academy established at Schenectady by mutual agreement of certain citizens, 12 trustees.
29 Ja	1793	Academy incorporated by the regents under the provisional name Academy of the Town of Schenectady. £500 and 110 acres of land pledged by citizens of Schenectady.
28 Ja	1794	Petition for college charter denied. Study of literature not enough advanced and funds insufficient.
25 F	1795	Incorporated by the regents with degree conferring powers. Several denominations incorporated in organization, hence "Union." First undenominational college in United States.

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<sup>1</sup>The official report of Union does not include the names of the governors of the university.



Month Year

- My 1797 First commencement; three graduates.
- 30 Mr 1805 Legislature authorized raising of \$80,000 by lottery.  
1812 Buildings on college hill begun.
- 13 Ap 1814 Legislature authorized raising of \$200,000 by lottery.  
Under this provision many needy students have  
since received free tuition.
- 1845 Department of civil engineering established.
- 25 Jl 1855 Department of analytic chemistry established.
- 26 Mr 1857 Alumni association incorporated.
- 15 Jl 1864 Charter amended. Quorum of trustees reduced from  
11 to seven.
- 11 Ja 1867 Charter amended. Tenure of president's office sub-  
ject to pleasure of majority of trustees instead of  
during good behavior.
- 2 Je 1871 Regents authorized election of four trustees from  
alumni association.
- 1873 Course of military instruction instituted.
- 16 Je 1879 Charter amended. If three trustees reside in  
Schenectady alumni association can not elect any  
other resident of the city.

## TRUSTEES

Ex officio

His Excellency David B. Hill, Governor  
Hon. Edward F. Jones, Lieutenant-Governor  
Hon. Frank Rice, Secretary of State  
Hon. Edward Wemple, Comptroller  
Hon. Elliot Danforth, Treasurer  
Hon. Charles F. Tabor, Attorney-General

President, Silas B. Brownell, LL. D. . . . 71 Wall st., New York  
Secretary, Clark Brooks . . . . . 55 William st., New York  
Rev. William Irvin, D. D . . . . . New York  
Hon. Judson S. Landon, LL. D. . . . . Schenectady  
Hon. Edward W. Paige, LL. D . . . . . Schenectady  
Wm. H. H. Moore . . . . . 51 Wall st., New York  
Rev. Denis Wortman, D. D . . . . . Saugerties  
Hon. John H. Starin. . . . . New York  
Lemon Thompson. . . . . Albany  
Hon. William H. King, LL. D. . . . . 180 Clark st., Chicago

Hon. John A. De Remer .....	Schenectady
Rev. George Alexander, D. D.....	10th st. and University pl., New York
Hon. Warner Miller, LL. D .....	Herkimer
Charles M. Culver, M. A., M. D.....	36 Eagle st., Albany
William J. Kline, M. A.....	Amsterdam

## APPOINTED DURING YEAR

Andrew J. Poppleton..... Omaha

## VACANCIES

Thomas R. Featherstonhaugh, M. D., 109 First st., N. E., Washington, D. C., term expired Je 1890

## ADMINISTRATION

Figures in column at left give first year of service in Union.

1868 President, Harrison E. Webster, LL. D.

B. A. Union 1868, M. A. 1872; LL. D. Rochester University 1888; Tutor and professor of natural history, Union 1868-83; Professor of natural history, Rochester University 1883-8; President of Union University 1888-; Author Works on marine zoology, mostly on the annelida chaetopoda of the Atlantic coast.

1883 Dean, Henry Whitehorne, LL. D.

B. A. Wadham College, Oxford; M. A. University of Mississippi 1849; LL. D. Union 1887; Professor of Greek, University of Mississippi 1854-61.

Treasurer, S. Edward Stimson, Long Island City.

1885 Secretary, James R. Truax, M. A.

B. A. Union 1876, M. A. 1879; B. D. Drew Theological Seminary 1878; Member American Philological Association.

1849 Librarian, Wendel Lamoroux, M. A.

B. A. and M. A., Union; Tutor, Union 1849-50; Professor of modern languages and assistant professor of belles lettres 1850-3; Acting professor of modern languages 1862-4; Assistant professor of rhetoric, Columbia 1868-9; Professor of modern languages and English essays, Wells College 1873-6; Professor English essays, Union 1876-85; Librarian, 1885-; Author of numerous contributions to periodical literature.

Acting Registrar, Mrs M. L. Peissner.

Curator of Museum, Maurice Perkins, M. A., M. D.

M. A. Harvard 1865 ; M. D. Albany Medical College 1868 ;  
Member American Chemical Society ; Author Course in  
analytical chemistry.

Director of Gymnasium, Charles W. Vanderveer.

Superintendent of Grounds and Buildings, George Clute.

## INSTRUCTION

Figures in column at left give first year of service in Union and years spent in teaching.

1868 Harrison E. Webster, LL. D. President.

28 See also "Administration."

<sup>1</sup>John Foster, LL. D. Nott Professor of Natural History.

1863 Henry Whitehorne, LL. D. Nott Professor of the Greek

48 Language and Literature.

See also "Administration."

1865 William Wells, LL. D. Professor of Modern Languages and

50 Literature and Lecturer on Current History.

M. A. Williams 1851 ; Ph. D. University of Berlin 1848 ; LL. D.  
Indiana Asbury University 1872 ; Professor of modern lan-  
guages, Genesee College 1851-65 ; Author of numerous contri-  
butions to periodical literature.

Maurice Perkins, M. A., M. D. Nott Professor of Analytical

25 Chemistry.

See also "Administration."

1881 Sidney G. Ashmore, M. A., L. H. D. Professor of the Latin

18 Language and Literature.

B. A. Columbia 1872, M. A. 1875 ; L. H. D. Hobart 1886 ;  
Instructor in Greek and Latin, Lehigh University 1873-6 ;  
Instructor in Latin, Columbia 1876-81 ; Member American  
Philological Association, American Oriental Society, Ameri-  
can Historical Society ; Editor Horace's Satires.

1885 James R. Truax, M. A. Professor of Rhetoric, the English

18 Language and Literature.

See also "Administration."

1885 Thomas W. Wright, Ph. B. Professor of Applied Mathe-

7 matics and Physics.

Ph. B. Yale 1872, C. E. 1880 ; Author Treatise on the adjust-  
ment of observations, 1884, Text-book of mechanics, 1890.

- 1885 Frank S. Hoffman, M. A. Professor of Mental and Moral  
10 Philosophy.  
B. A. Amherst 1876, M. A. 1883; B. D. Yale 1880; Fellow of Yale  
1880-2; Instructor in mental and moral philosophy, Wesleyan  
University 1883-5.
- 1886 Benjamin H. Ripton, M. A. Professor of Mathematics, 114  
9 Nott Terrace.  
B. A. Union 1880, M. A. 1886; Principal Whitestown Seminary  
1883-5; Adjunct professor of mathematics, Union 1886-7; Pro-  
fessor of mathematics 1887- .
- 1886 Charles C. Brown, C. E. Professor of Civil Engineering.  
7 C. E. University of Michigan 1879; Professor of civil engineer-  
ing, Rose Polytechnic Institute 1884-6; Author of contribu-  
tions to periodical literature.
- 1868 Samuel B. Howe, Ph. D. Adjunct Nott Professor and  
29 Principal of Union School, 615 Union st.  
B. A. Union 1862, M. A. 1865, Ph. D. 1887; Principal Catskill  
Free Academy 1865-7.
- 1887 Arthur S. Wright, M. A. Junior Professor of Modern  
5 Languages.  
B. A. Union 1882, M. A. 1887; Adjunct professor of modern  
languages 1887-90; Junior professor of modern languages  
1890- .
- 1884 James H. Stoller, M. A. Adjunct Professor of Natural  
6 History, 702 Union st.  
B. A. Union 1884, M. A. 1887; Tutor in natural history 1884;  
Adjunct professor of natural history 1889- .
- 1889 Philip H. Cole, B. A. Adjunct Professor of English, 16  
2 Union av.  
B. A. Union 1888; Tutor in English 1889-90; Adjunct professor  
of English, 1890- .
- 1889 Edwin H. Winans, B. A. Adjunct Professor of Mathematics,  
2 159 Lafayette st.  
B. A. Union 1888.
- 1890 Livingston J. Little, C. E. Tutor in Civil Engineering.  
1 C. E. Union 1886.

## APPOINTED DURING YEAR

Livingston J. Little, C. E. Tutor in civil engineering. Elected  
1890.



HONORARY DEGREES

- B. A.—Joseph E. Odell  
George J. Schermerhorn  
M. A.—Goodwin Brown  
James M. Crane  
Alexander Hadden, M. D.  
D. D.—Charles H. Baldwin  
Albert Foster  
Alexander Rankin  
John Wright  
LL. D.—Frank Loomis  
William H. McElroy

COLLEGE APPOINTMENTS

Valedictory, Albert B. Van Voast..... Schenectady

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

BLATCHFORD PRIZES		Value
First, F. E. Hawkes, Elmira.....		\$40
Second, J. I. Bennett, Hyde Park, Ill.....		30

ALLEN PRIZES		
First, F. L. Carroll, Johnstown.....		25
Second, F. E. Hawkes, Elmira.....		20
Third, J. C. Stewart, Perth Center.....		15

CLARK PRIZES		
First, H. W. Briggs, Schenectady.....		15
Second, W. A. McDonald, Gloversville.....		10

SOPHOMORE ORATORICAL PRIZES		
First, J. V. Wemple, Duanesburgh.....		15
Second, R. Dougall, Schenectady.....		10

JUNIOR ORATORICAL PRIZES		
First, F. W. Ferguson, Amsterdam.....		15
Second, H. W. Briggs, Schenectady.....		10

INGHAM PRIZE		
A. B. Van Voast, Schenectady.....		70

Veeder prize for extemporaneous speaking, \$50, not awarded.  
Warner prize, silver cup, \$50, not awarded.

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## 1 — CLASSICAL COURSE

This is the usual baccalaureate course. Students may pursue additional studies in other courses. After the second term of the junior year, the work is largely elective.

French and German are included in this course.

## 2 — SCIENTIFIC COURSE

The modern languages are here substituted for the ancient, and the amount of mathematical and English studies is increased. Latin or Greek of the classical course may be substituted on consent of the faculty for French or German of the scientific. Electives, after the second term of the junior year, the same as in the classical course.

## 3 — ENGINEERING COURSE

The instruction and practice given qualify the student for immediate usefulness in the field and office, and, after a moderate amount of experience, for the higher positions in the profession. On satisfactory examination he receives the degree of civil engineer.

## 4 — ECLECTIC COURSE

Any studies in the preceding courses, making a proper amount of class work, may be taken by those found qualified to pursue them. A certificate of attainment is given.

## 5 — COURSE IN ANALYTIC CHEMISTRY

This course includes theoretical and experimental chemistry, systematic qualitative and quantitative analysis, and their applications to medicine, manufactures, agriculture, mineralogy, metallurgy, etc. It provides special work in the laboratory.

The medical lectures of the Albany Medical College are free to all Union College students; and matriculation is granted to Union College graduates without examination.

## DEPARTMENTS OF INSTRUCTION

## The Greek language and literature

The course of instruction in this department extends through the freshman and sophomore years. The object kept constantly in view throughout the course is not merely to teach so many works of an unknown tongue, but to instruct and educate the pupil by a system of mental training grounded upon the works of the most noble poets, dramatists, historians and philosophers of the ancient world. To this end, the pupil is taught not only to translate into accurate and idiomatic English, to analyze with great care the grammatical construction and to compare it with that of his own tongue, but especially to obtain a thorough knowledge and critical appreciation of the authors selected for his use.

## The Latin language and literature

The required course in this department extends through the freshman and sophomore years. In the junior year voluntary, and, in the senior year, elective courses are offered. In the freshman year Latin prose is considered more important than Latin poetry. In the sophomore and junior years, the Roman poets constitute the backbone of the work of the department. In the senior year, a "seminary" is offered, in which the student receives advice and guidance in making independent investigations. Any graduate member or member of the junior class may, in the discretion of the head of the department, become a regular attendant at the "seminary."

The subjects offered for the academic year 1890-91 are as follows :

*Freshman year*—First term, Livy, book 21; prose composition; Roman history. Second term, Livy, book 22; prose composition; Roman history. Third term, Selected letters of Cicero; prose composition.

*Sophomore year*—First term, Horace. Second term, Tacitus. Third term, Terence (Andria and Heautontimorumenos).

*Junior year* (voluntary)—First term, Juvenal. Second term, Suetonius (Prof. H. T. Peck's edition). Third term, Allen's Remnants of early Latin.

*Senior year* (elective)—Latin “seminary.” Any author or group of authors may be made the basis of study. The head of the department will endeavor to adapt the work to the possible requirements of young men intending to make teaching their occupation.

### Modern languages

The modern languages supply the linguistic training of the scientific course and are regular studies during the freshman and sophomore years and one term of the junior year. Instruction is imparted by exercises in translation (written and oral), conversational practice, and familiar lectures on the standard authors read.

The French language is a regular study through five terms, beginning with the first term freshman. Text-book: Whitney's French course. At a later period, classical and contemporary French literature are read.

The study of the German language begins with the first term sophomore. Text-books: Cook's Otto's grammar, Whitney's reader and the poets Schiller and Goethe.

The modern languages are now required in the classical course. The sophomore class takes French five times a week in the second and third terms, and the junior class the German throughout the year three times a week.

The Spanish language is a voluntary study, and classes are formed only when the demand is sufficient to justify them.

### Rhetoric, English language and literature

Words, their history and distinctions; the structure of sentences, with reference chiefly to clearness and force; and advanced Rhetoric are the subjects studied in the freshman year. The sophomore and junior years are devoted to English literature, especially to the critical study of masterpieces. The philology of the English tongue and Anglo-Saxon are taught in the senior year.

Original orations are required from all students above the grade of freshman, and those of the juniors and seniors are delivered in the presence of the entire college.

Advanced work in English philology and criticism, and courses of reading for the formation of style will be provided for honor students. Direction will also be given to those students who are desirous of making special researches in this department.



## Mathematics

The course of instruction in pure mathematics begins with the first term freshman, and continues in the scientific and engineering courses through two years, and in the classical course through a year and one term.

In the first term freshman, the work in higher algebra is the same for all students. At the end of that term a division is made between the students of the classical and the scientific and engineering courses, and a greater amount of work is required of the latter. The required studies of the classical course are algebra, solid geometry, trigonometry, and analytic geometry, one term being given to each subject.

With the second term freshman, scientific and engineering students begin the study of trigonometry, in addition to solid geometry. During the third term, trigonometry is succeeded by analytic geometry, which is completed in the first term sophomore. The remainder of the year is given to the study of calculus.

Descriptive geometry is a required study of the engineering course. In the first term the work consists of problems in orthographic projection on two planes, tangent lines and planes, intersections of planes, cones, cylinders, surfaces of revolution, etc. In the second term the work includes the different projections of the sphere, shades and shadows, and linear perspective.

In the senior year, electives are offered in some branch of the higher mathematics, geometry of space, modern algebra, determinants, quaternions, etc.

## Chemistry

In the undergraduate department, chemistry is taught by lectures and recitations during the junior year.

There has recently been established a regular daily two-hours course of experimental chemistry at the laboratory.

The Nott laboratory is open in all branches of chemistry for special students; especially for students of agriculture or medicine, pharmacutists, manufacturing chemists, mineralogists, metallurgists, and students of medical jurisprudence.

The course includes instruction in theoretical and experimental chemistry and systematic qualitative and quantitative analysis, in all their branches and in their application to the arts and manufactures.

### Natural history

The required studies common to the scientific and classical courses, are human physiology, zoology and geology. They are taken in the order named, and extend through three terms, beginning with the second term of the junior year.

Physiology is taught by lessons from a text-book, amplified by familiar lectures, and illustrated by preparations of the tissues and organs of the lower animals, and by models of the parts of the human body.

In zoology, instruction is given by text-book, lectures, and the objective study of specimens and preparations.

Geology is taught by text-book, lectures, the examination of minerals, rocks and fossils, and by occasional field excursions.

The additional studies required in the scientific course are practical biology in the third freshman term, and botany in the third sophomore term. The course in biology is intended to teach the student proper methods of study, while at the same time he gains a knowledge of the fundamental phenomena of living bodies. Botany is studied both from the standpoint of plant biology and that of systematic botany.

In the engineering course, of the above studies, botany and geology are taken.

Elective courses in the natural history laboratory are open throughout the senior year. They may be arranged in adaptation to the needs of individual students. The usual course in the first term is in comparative anatomy and physiology, the student dissecting typical forms beginning with the lower and proceeding in order of increasing complexity of structure and function. The following forms are studied: an annelid, an insect, a crustacean, a mollusc, a fish, a batrachian, a bird, a mammal. In the second term a careful dissection of one of the larger mammals is made. In the third term a course in practical botany is pursued, the method being similar to that employed in zoology.

### Mechanics and physics

The instruction in this department begins with the first term of the junior year. The students in the scientific and engineering sections pursue a course of a more mathematical character than the students in the classical section.

For the illustration of the class-room work and for experimental work, an extensive collection of modern apparatus has been obtained, including several fine acoustical instruments by Koenig, and optical instruments by Duboscq.

The course for special honors begins with the third term junior year and continues through the senior year. The course comprises four terms of experimental work in the laboratory and three terms of mathematical physics, including the application of the method of least-squares to physical problems.

### History

A knowledge of the facts and philosophy of history is given both by lectures and recitations. The seniors during their third term are instructed in the history of civilization. Prof. Wells gives a course of lectures, in the spring term of each year on some subject of current history.

### Mental and moral philosophy

The studies included in this department are logic, psychology, ethics, and the history of philosophy, in all of which the instruction is given partly by lectures and partly by the use of a text-book.

#### LOGIC

This is a required junior study, and is confined to the simple elements of the science. Text-book: Jevon's Elements of logic.

#### PSYCHOLOGY

This is a required study during the first term of the senior year. It is treated as an experimental science, the actual facts of experience furnishing the data; and the attempt is made to arrange and classify these facts into a system. Text-book: Baldwin's Handbook of psychology.

#### ETHICS

This is a required study during the second term of senior year. Text-book: Calderwood's Handbook of moral philosophy.

#### POLITICAL ECONOMY

This is a required study during the third term of senior year.

#### HISTORY OF PHILOSOPHY

This is an elective study and extends through the whole senior year. Text-book: Schwegler's History of philosophy.



## CIVIL ENGINEERING COURSES OF STUDY

### Mathematics

The studies of this department include the following : algebra, geometry, plane and spheric trigonometry, analytic geometry, descriptive geometry, differential and integral calculus. Optional courses in higher mathematics are also offered.

### Physics

Subjects included in the course : statics, dynamics, hydrostatics, hydrodynamics, pneumatics, optics, acoustics, heat, electricity, magnetism and galvanism.

### Astronomy

The instruction in astronomy includes spheric astronomy, theory of astronomic instruments, and physical astronomy.

The students are also given a practical course in astronomic surveying and location, comprising the determination of time, latitude and longitude, and the location of meridians, parallels, great circles and rhumb lines.

### Natural history

Instruction in geology is given during the first term of the senior year in a series of recitations and lectures, from 60 to 70 in number.

*Lithologic geology* — The attention of the student is first directed to a carefully identified series of specimens, and the methods and tests used in identification are given. Then unnamed specimens are given him, the nature and constitution of which he is expected to determine by comparison and by application of the proper tests.

*Paleontology* — By the examination, on the part of the student, of fossils especially characteristic of the principal formations and by lectures, the attempt is made to familiarize the mind with the more important forms of extinct animal and vegetable life. The conditions favorable and unfavorable to the preservation of such forms in the rocks are also considered. Facilities for special study of paleontology are placed at the disposal of the student without extra charge.

*Historic geology* is taught, including the different conditions under which the rock-masses occur, the order of the succession of the formations in time, etc.



*Dynamic geology* — The nature and origin of coal, peat, coral reefs, salt ; the action of water in erosion, transportation, etc. ; of frozen water, glaciers, icebergs ; the various theories of volcanic action ; earthquakes and the origin of mountains ; metamorphisms ; veins, etc.

*Mineralogy* is taught during the third senior term by a course of practical lessons, illustrated by a complete set of models of crystals and a series of 600 specimens for determination by crystallographic and blow-pipe examination.

*Botany* is taught during the third term, sophomore, both from text-book (Gray's) and practically in the field.

### Chemistry, mineralogy and metallurgy

The recitations in chemistry extend through three terms. In addition to this, the students receive laboratory instruction. They are taught by means of qualitative analysis and exercise in the use of the blow-pipe to determine the constitution of the useful minerals. Their knowledge of these minerals is increased by a course in determinative mineralogy, in which use is made of the celebrated Wheatley collection, and a complete set of crystal models. As far as practicable, the operations of industrial chemistry are carried out.

The student is required to go through a thorough course in assaying, treating ores of lead, silver, copper, mercury and gold. Attached to the laboratory is a library of technological books, always open to the students for reference.

Detached from the laboratory is a photographic room, with skylight, printing-room, etc., and instruction is given by a practical photographer.

### Modern languages

(See page 605)

### Rhetoric and English

The instruction in English is eminently practical, and has especial reference to the clear and forcible presentation of a subject by the student. The full course in English and rhetoric, as laid down on page 605, is required of engineering students to the first term junior, an opportunity is offered and students are urged to continue the course throughout. One essay on a literary subject, under the direction of the professor of English, is required of each student in the engineering course each term after the first freshman ; and one essay on a technical subject,

each term after the freshman year. The literary essays of the second term sophomore, junior and senior take the form of orations.

### Drawing and descriptive geometry

The instruction in this department extends throughout the entire course.

In the first and second terms freshman the student is instructed in free hand drawing, in the use of drawing instruments and the construction of geometrical problems, conventional colors, and drawing in plan, elevation and section. Drawings are made from models and from engineering structures. In the third term freshman, plotting of actual surveys made by the class, and methods of representing topographical features are taught.

In the first and second terms sophomore, the student is instructed in descriptive geometry (orthographical projections). The drawings of intersections, developments, etc., are from Schroeder's models, the Paris polytechnic school models of intersections, and the Olivier models. The course includes spherical projections, shades and shadows and perspective. In the second term he is instructed in the elements of machine drawing. In the third term, practice is given in topographical drawing and plotting, and methods are given of representing the relief of ground by contour lines, hatchings and shades from vertical and oblique light, Bardin's models of the various forms of ground being used to illustrate the subject.

In the junior year are taught oblique projections, including mechanical, military and isometrical projections and the construction of problems in graphics.

In the senior year, instruction is given in making drawings for road surveys and construction; in designing of engineering structures, including detail drawings of constructions in wood and iron; and in stereotomy and the theory of the arch, with drawings from the stereotomy models of the Paris polytechnic school.

### Engineering

The subjects of the course are so arranged as to harmonize with the seasons of the year, suitable to field-work or other work. The course includes the following subjects:

*Surveying* — Land surveyed with chain alone, chain and compass, transit, theodolite, plane-table and solar compass; mining

surveying; hydrographic surveying, topographic surveying; geodetic surveying, and astronomic surveying and location.

*Leveling* with the plumb-line level, water-level and spirit-level; angular leveling, and barometric leveling.

*Mensuration* of engineering structures.

*Road engineering*, comprising the reconnaissance, location and construction of common roads and railroads; the improvement of the surface of common roads, graveling, macadamizing, paving, planking, etc.; the construction of railroads, including earthwork, mechanic structure, superstructure and equipment.

*Engineering statics*—Statical forces, weights of bodies, fluid pressure, semi-fluids, heat, cold, animal force, etc.; dynamic forces, solids in motion, impact, pile-driving, waves, wind, etc.

*Strength of materials*—Data and formulas for calculating the resistance of materials to extension, compression, torsion, bending and breaking.

*Stability of structures*—Data and formulas for calculating the resistance of frames, roofs, bridges, retaining-walls, arches, etc., against dislocation, overturning, sliding, etc.

*General construction*—Materials, foundations, masonry, carpentry, etc.

*Bridge engineering*—Plans and calculations of the forms and dimensions of bridges of wood, iron or stone. A working model of a bridge, in which the strains at various points are shown by a dynamometer, illustrates the identity of the results of theory and experiment.

*Water engineering*—Hydraulic formulas, the supply of water for towns and for irrigation, the removal of water by drainage and sewerage, canals, the improvement of river navigation, harbors, sea-coasts, etc.

## Agricultural engineering

### SANITARY ENGINEERING

*Field work*—The instruction is made as practical as possible. The students have constant practice in the field whenever the weather will permit. The field work consists in land surveying with the compass and chains, etc.; triangular and trilinear surveying and the use of the transit, solar compass and plane-table; common, trigonometric and barometric leveling, and the use of the spirit-level, water-level, theodolite and barometer; road engineer-

ing, comprising the reconnaissance and location of a line of road, leveling the line, running curves, staking out side-slopes and foundation pits, etc. (a corps for road engineering being regularly formed, and each student taking in turn the position of flagman, chainman, rodman, leveler and transitman); astronomic surveying and location and the use of the sextant.

#### VOLUNTARY STUDIES

Any of the studies of the classical or of the scientific course of the college can be taken by the engineering students without extra charge.



## FRESHMAN CLASS

CLASSICAL COURSE		Hours per Week	SCIENTIFIC COURSE		Hours per Week	ENGINEERING COURSE		
4 4 4 2 5	Xenophon or Homer Livy, book 21 English, clearness, study of words Algebra Greek prose composition Latin prose composition	5 2 3 3 5	FIRST TERM French grammar English, clearness, study of words Free hand drawing Algebra		5 2 3 5	French grammar English, clearness, study of words Free hand drawing Algebra		
	SECOND TERM							
	4 4 3 4	Xenophon, Homer or Herodotus Livy, book 22 English, past and present, Rhetoric, intellectual qualities Geometry Greek prose composition Latin prose composition One essay	5 3 4 3	French reader English, past and present, Rhetoric, intellectual qualities Geometry Trigonometry One essay		5 3 4 2	French reader English, past and present, Rhetoric, intellectual qualities Geometry Trigonometry Drawing One essay	
		THIRD TERM						
		4 4 2 2 5	Xenophon, Herodotus or Euripides Selected letters of Cicero English — Rhetoric, emotional qualities Trigonometry and analytic geometry Greek prose composition Latin prose composition One essay	5 2 5 3	French reader English — Rhetoric, emotional qualities Trigonometry and analytic geometry Biology One essay		5 2 5 3	French reader English — Rhetoric, emotional qualities Trigonometry and analytic geometry Surveying One essay

## SOPHOMORE CLASS

CLASSICAL COURSE		Hours per Week	SCIENTIFIC COURSE		Hours per Week	ENGINEERING COURSE	
4	Euripides or Æschylus	5	FIRST TERM		5	French literature	
4	Horace	3	French literature		3	English — Chaucer and the early poets	
3	English — Chaucer and the early poets	3	German grammar		4	Analytic geometry and calculus	
4	Analytic geometry	4	English — Chaucer and the early poets		4	Descriptive geometry	
	Greek prose composition		Analytic geometry and calculus			Two essays	
	Latin prose composition		Two essays				
	Two essays						
			SECOND TERM				
4	Euripides or Æschylus	4	French literature		4	French literature	
4	Tacitus	5	German literature		2	English — Shakspeare and the dramatists	
4	French	2	English — Shakspeare and the dramatists		4	Calculus	
5	English — Shakspeare and the dramatists	2	Calculus		5	Descriptive geometry, mechanism and machine drawing	
2	Greek prose composition	4	One essay, one oration			One essay, one oration	
	Latin prose composition						
	One essay, one oration						
			THIRD TERM				
4	Euripides, Sophocles or Plato	5	German		2	English — Master prose writers	
4	Terence, Andria, Heautontimorumenos	2	English — Master prose writers		4	Calculus	
4	French	4	Calculus		5	Surveying and road engineering	
5	English — Master prose writers	4	Botany		4	Botany	
2	Greek prose composition		One essay, one oration			Two essays	
	Latin prose composition						
	One essay, one oration						

## JUNIOR CLASS

CLASSICAL COURSE		Hours per Week	SCIENTIFIC COURSE		Hours per Week	ENGINEERING COURSE	
3	German grammar	4	FIRST TERM		3	German grammar	
2	English — Fiction and modern poetry	2	German tragedy		2	Advanced calculus	
5	Mechanics	5	English — Fiction and modern poetry		5	Mechanics	
5	Chemistry	5	Chemistry		5	Chemistry	
	Two essays		Two essays			Two essays	
3	German reader	5	SECOND TERM		5	German literature	
5	Physics	3	Physics		3	Applied mechanics	
4	Physiology	4	Chemistry		5	Physics	
3	Logic	3	Physiology		3	Chemistry	
	One essay, one chapel oration		Logic			One essay, one chapel oration	
			One essay, one chapel oration				
			THIRD TERM				
3	Required	3	Required		5	German	
5	German tragedy	5	English — special studies in style		3	Applied mechanics	
5	Physics	5	Physics		5	Physics	
	Zoology	5	Zoology		3	Chemistry (organic)	
	One essay, one chapel oration		One essay, one chapel oration			Two essays	
	Electives		Electives				
2	Greek		Same as for classical course				
2	Latin						
3	Chemistry						
2	Mineralogy						
2	Botany						
2	Biology						

1 At least two hours per week must be chosen from these electives.

## SENIOR CLASS

CLASSICAL COURSE.		SCIENTIFIC COURSE		ENGINEERING COURSE	
Hours per week		Hours per week		Hours per week	
5	Required Psychology	5	FIRST TERM Psychology Geology Two essays 1 Electives Same as for classical course	4	German
5	Geology			5	Geology
	Two essays			6	Materials of construction, graphical analysis of structures Two essays
2	1 Electives				
2	Greek				
3	Latin				
2	English—Philology				
2	Higher mathematics				
2	Physical laboratory				
2	Natural history laboratory				
2	Chemical laboratory				
3	History of philosophy				
SECOND TERM					
5	Required	5	SECOND TERM Required Ethics Astronomy One essay, one chapel oration 1 Electives Same as for classical course	11	Engineering design and construction, steam engine
4	Ethics			4	Astronomy
	Astronomy				One essay, one chapel oration
	One essay, one chapel oration				
	1 Electives				
	Same as for first term, substituting 2 hours Anglo-Saxon for English and adding 3 hours American politics				
THIRD TERM					
5	Required	5	THIRD TERM Required Political economy History of civilization One essay 1 Electives Same as for classical course	5	Mineralogy and blow-pipe analysis
3	Political economy			1	Thesis
	History of civilization			9	Engineering design, stereotomy and theory of the arch, hydraulics
	One essay				
	1 Electives				
	Same as for first term, substituting 3 hours modern languages for Greek and Latin				

1 From this list a sufficient number of studies must be chosen to make, with the required studies, a total of 15 hours per week.



## REQUIREMENTS FOR GRADUATION

The degrees of the college are conferred in harmony with the code adopted in 1880, which says: The successful completion of either of the above courses (classical or scientific), shall entitle a student to the degree of bachelor of arts or of science. The candidate for a degree must have entered college before the close of the first senior term, have paid all dues to the college treasurer, and returned all books borrowed from the library. He must also attend the conferring of degrees, or be expressly excused therefrom. For requirements for degree of civil engineer see p. 603.

## BUILDINGS

Church or chapel, stone, value \$110,000. Library, two story brick, built 1881, floor area 8,415 sq. ft., value \$41,000. President's house, value \$10,000. Gymnasium, value \$6,500. All other buildings, value \$242,500.

## HAMILTON COLLEGE

*Clinton*

### HISTORIC SKETCH

For list of date abbreviations, see p. 254.

Month	Year	
31 Ja	1793	Charter granted to Hamilton-Oneida Academy. Work of academy greatly hindered by lack of funds.
	1805	Application for college charter denied for lack of funds
11 Mr	1811	Second application for college charter denied for same reason.
10 Mr	1812	Third application granted on condition that funds be increased to \$50,000.
26 My	1812	Regents issued charter. Power given to confer degrees.
	1814	\$40,000 received by lottery act.
	1867	Observatory and chair of astronomy endowed by Edwin Litchfield.
14 Ja	1875	Charter amended. Alumni of three years' standing to elect by ballot four additional trustees.
		Four classes trustees, one class elected annually.
		Trustees to be alumni of at least 10 years' standing. 13 a quorum.

## TRUSTEES

## Elected

1867 President, Charles C. Kingsley, M. A. ....	Utica
1884 Treasurer and Secretary, Thomas B. Hudson, D. D. ....	Clinton
1869 L. Merrill Miller, D. D. ....	Ogdensburg
1869 Publius V. Rogers, M. A. ....	Utica
1870 Samuel S. Ellsworth, M. A. ....	Penn Yan
1871 Henry Kendall, D. D. ....	New York
1871 Gilbert Mollison. ....	Oswego
1872 Ellis H. Roberts, LL. D. ....	Utica
1874 George M. Diven, M. A. ....	Elmira
1874 Daniel P. Wood, M. A. ....	Syracuse
1875 David H. Cochran, Ph. D., LL. D. ....	Brooklyn
1875 Theodore W. Dwight, LL. D. ....	New York
1875 Joseph R. Hawley, LL. D. ....	Hartford, Ct.
1877 James B. Lee, D. D. ....	Franklinville
1880 Henry Darling, D. D., LL. D. ....	Clinton
1881 Edward North, L. H. D., LL. D. ....	Clinton
1883 Elihu Root, M. A. ....	New York
1884 Charles A. Hawley, M. A. ....	Seneca Falls
1884 John Jay Knox, M. A. ....	New York
1885 A. Norton Brockway, M. A., M. D. ....	New York
1885 Horace B. Silliman, M. A. ....	Cohoes
1886 Theodore M. Pomeroy, M. A. ....	Auburn
1886 T. Ralston Smith, D. D. ....	Buffalo
1886 George B. Spalding, D. D. ....	Syracuse

## APPOINTED DURING YEAR

1890 M. H. Merwin, LL. D. ....	Utica
1890 T. H. Camp. ....	Watertown
1890 Charles L. Slone, M. A. ....	Syracuse
1890 Thomas D. Cattin. ....	Ottawa, Ill.

## VACANCIES

William D. Walcott, New York Mills, died Ap 1890  
 Rev. James B. Shaw, D. D., Rochester, died My 1890

## ADMINISTRATION

Figures in column at left give first year of service in Hamilton.

1881 President, Rev. Henry Darling, D. D., LL. D. Pastor of the College Church.

B. A. Amherst 1842, M. A. 1852; D. D. Union 1860; LL. D. Hamilton and Lafayette 1881; Member Victoria Institute; Author *Closer walk, Slavery and the war.*

1854 Treasurer, Thomas B. Hudson, D. D., 67 College st.

B. A. Hamilton 1851, M. A. 1854, D. D. 1871; Tutor, Hamilton 1854-6; Treasurer 1886-.

1869 Secretary, Rev. Abel Grosvenor Hopkins, Ph. D.

B. A. Hamilton 1866, M. A. 1869; Ph. D. Lafayette College 1887.

1880 Registrar, Rev. Oren Root, M. A.

Assistant, Yates Polytechnic Institute 1856-7; Principal Monroe High School, Mich. 1859-60; Tutor, Hamilton 1860-2; Principal Rome Academy 1862-5; Professor of English, University of the State of Missouri 1866-71; Superintendent of schools, Carrollton, Mo. 1871-3 and 1878-80; President Pritchett Institute, Glasgow, Mo. 1873-6; Editor *Columbian* and *Franklin* speakers.

1886 Librarian, Rev. Arthur Stephen Hoyt, B. A.

B. A. Hamilton 1872; D. D. Auburn Theological Seminary 1878. Instructor in rhetoric and elocution, Robert College, Constantinople 1872-5.

1889 Assistant Librarian, Edgar Coit Morris, B. A.

B. A. Hamilton 1889.

Janitor-in-Chief, Cornelius De Regt.

## INSTRUCTION

Figures in column at left give first year of service in Hamilton and years spent in teaching.

1881 Rev. Henry Darling, D. D., LL. D. President and Walcott  
10 Professor of the Evidences of Christianity, of Moral Science and Natural Religion.

See also "Administration."

1843 Edward North, LL. D., L. H. D. Edward Robinson Pro-  
50 fessor of the Greek Language and Literature.

B. A. Hamilton 1841; M. A. Brown University 1844; L. H. D. University of the State of New York 1869; LL. D. Madison University 1887; Professor of Greek and Latin, Hamilton 1843-62; Member American Philological Association, American Philosophical Society, *Philological Syllogos* of Constantinople.

- 1883 Rev. Edward John Hamilton, D. D. Albert Barnes Professor  
20 of Intellectual Philosophy and Hebrew.

B. A. Hanover College 1853, M. A. 1856; D. D. Monmouth College 1878; S. T. D. Wabash College 1878; Graduated Princeton Theological Seminary 1858; Professor of Philosophy, Hanover College 1868- ; Professor *pro tem.*, College of New Jersey 1882-3; Member American Institute of Christian Philosophy; Author *The human mind*, 1883, *Mental science*, 1886, *New analysis in fundamental morals*, 1874.

- 1878 Ambrose Parsons Kelsey, Ph. D. Stone Professor of  
35 Natural History.

B. A. Hamilton 1856, M. A. 1859; Ph. D. Bowdoin 1881; Professor of natural sciences, Wilson Academy 1856-7; Principal Cincinnati Academy, 1857-9; Professor of natural sciences, Albany State Normal School 1859-61; Principal Farmington Academy 1861-4; Principal State Normal School, Farmington 1864-5; Principal Rural High School 1865-6; Principal Clinton Grammar School 1866-73; Principal Little Blue School, Farmington 1873-5; Principal State Normal School, Plymouth (N. H.), 1875-9.

- 1880 Rev. Oren Root, M. A. Samuel Fletcher Pratt Professor  
33 of Mathematics.

See also "Administration."

- 1871 Albert Huntington Chester, M. E., Ph. D. Childs Professor  
24 of Agricultural Chemistry and Professor of General Chemistry and Mineralogy.

B. A. Union 1872; M. E. Columbia 1868, Ph. D. 1878; Lecturer on chemistry, Buffalo Female Academy 1861-84; Assistant in mineralogy, Columbia School of Mines, 1865-8; Fellow American Association for the Advancement of Science; Member American Chemical Society, American Institute Mining Engineers, American Society of Microscopists, Mineralogical Society of Great Britain and Ireland, Société Minéralogique de France; Author *Catalogue of minerals*, 1886.

- 1869 Rev. Abel Grosvenor Hopkins, Ph. D. Benjamin Bates  
22 Professor of the Latin Language and Literature.

See also "Administration."

- 1889 Rev. William Rogers Terrett, D. D. Maynard Knox Pro-  
2 fessor of Law, History, Civil Polity and Political Economy.

B. A. Williams 1871; M. A. 1874; D. D. Hamilton 1888.



- 1874 Herman Carl George Brandt, M. A. Professor of the German  
16 and French Languages and Philology.

B. A. Hamilton 1872, M. A. 1875; Instructor in modern language, Hamilton 1874-6; Associate professor of German, Johns Hopkins 1876-82; Professor of German, French and philology, Hamilton 1882- ; Member American Philological Association, Modern Language Association, American Folklore Society; Author Brandt's German grammar, 1884, Brandt's German reader, 1890; Edited Lessing's Nathan der Weise.

- 1886 Rev. Arthur Stephen Hoyt, M. A. Kingsley Professor of  
8 Logic, Rhetoric and Elocution, and Professor of English Literature.

See also "Administration."

- 1888 Clinton Scollard, M. A. Assistant Professor of Rhetoric and  
5 Elocution.

B. A. Hamilton 1881, M. A. 1884; Instructor, Brooklyn Polytechnic Institute 1881-3; Author Pictures in song, 1884. With reed and lyre, 1886, Old and new world lyrics, 1888.

- 1889 Edward Fitch, M. A. Assistant Professor of the Greek  
5 Language and Literature.

B. A. Hamilton 1886, M. A. 1889; Professor of Greek, Park College 1886-9.

- 1889 Edgar Coit Morris, B. A. Instructor in Latin.  
1 See also "Administration."

#### VACANCIES

- 1858 Christian Henry Frederick Peters, Ph. D. Litchfield pro-  
32 fessor of astronomy and director of the Litchfield observatory. Died 19 J1 1890.

#### APPOINTED DURING YEAR

Rev. William Rogers Terrett, D. D. Maynard Knox professor of law, history, civil polity and political economy.

Edward Fitch, M. A. Assistant professor of the Greek language and literature.

## HONORARY DEGREES

Ph. D.—	Prof. Herbert Malcolm Hill . . . . .	Buffalo
D. D.—	Rev. William Hutton . . . . .	Philadelphia
	Rev. Luther Allen Ostrander . . . . .	Lyons
	Rev. George Patton . . . . .	Rochester
LL. D.—	Horace Brinsmade Silliman . . . . .	Cohoes
	Hon. John Jay Knox . . . . .	New York
	Hon. Charles Henry Truax . . . . .	New York

## COLLEGE APPOINTMENTS

Valedictory,	Lincoln Abraham Groat . . . . .	Franklin
Salutatory,	Walstein Root . . . . .	Clinton
High honors		
	James Burton . . . . .	Albany
	William D. Crockett . . . . .	Sterling
	George H. Minor . . . . .	Deposit
	Marco Nikola Popoff . . . . .	Bansko, Macedonia
	Delos De W. Smyth . . . . .	Clinton

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

## BROCKWAY ENTRANCE PRIZES

First,	George Hobart Post, Pulaski
Second,	Daniel Wvette Burke, Oxford

## MCKINNEY DECLAMATION PRIZES

<i>Freshmen</i> —	First, Nathaniel McGriffen, Fairhaven
	Second, Alexander Wouters, South Hammond
<i>Sophomores</i> —	First, John Hooker, jr, Fly Creek
	Second, Thomas W. Chester, Clinton
<i>Juniors</i> —	First, Thomas L. Coventry, Deerfield
	Second, Bradley Shepard, Penn Yan

## MCKINNEY ENGLISH ESSAY PRIZES

<i>Freshmen</i> —	First, Charles R. La Rue, Little Falls
	George H. Post, Pulaski
	Second, Joseph R. Baker, New Hartford
	Thomas B. Fitch, Cortland

*Sophomores* — First, John McC. Curran, Potsdam  
 Charles W. Yeomans, Deposit  
 Second, Harvey H. Fay, Potsdam  
 Gregory Rosenblum, Nijni Novgorod,  
 Russia

*Juniors* — First, Thomas E. Hayden, Rudestown  
 George M. Weaver, Utica  
 Second, George H. Harkness, Rockford, Ill.  
 Duncan C. Lee, Franklinville

## HAWLEY CLASSICAL MEDALS (JUNIORS)

George H. Harkness, Rockford, Ill.  
 Eugene H. Northrup, Elbridge  
 Bayard L. Peck, Hudson  
 Albert E. Stuart, Franklin

## MUNSON FRENCH PRIZES (JUNIORS)

First, George M. Weaver, Utica  
 Second, George V. Edwards, Riverhead

## CURRAN CLASSICAL MEDALS (JUNIORS)

First, Duncan C. Lee, Franklinville  
 Second, Aurelian Post, Pulaski

## SOUTHWORTH PRIZES IN PHYSICS (JUNIORS)

First, Albert E. Stuart, Franklin  
 Second, William H. Kelly, East Weymouth, Mass.

## TOMPKINS MATHEMATICAL PRIZES (JUNIORS)

First, Albert E. Stuart, Franklin  
 Second, George H. Feltus, Auburn

## MUNSON GERMAN PRIZES

First, Frank Gibbons, Franklin  
 Second, James Burton, Albany

## UNDERWOOD CHEMISTRY PRIZES

First, Eddy C. Covell, Cazenovia  
 Second, Alfred A. Moore, Clinton

## METAPHYSICS PRIZES

First, Edward N. Smith, Watertown  
 Second, Marco N. Popoff, Bansko, Macedonia

## KELLOGG PRIZE FOR COMMENCEMENT ORATION

James A. Seavey, Saratoga

## MCKINNEY PRIZES FOR EXTEMPORANEOUS DEBATE

First, Delos DeW. Smyth, Clinton

Second, Lincoln A. Groat, Franklin

## KIRKLAND ORATION PRIZE

Delos DeW. Smyth, Clinton

## HEAD ORATION PRIZE

Walstein Root, Clinton

## PRUYN ORATION MEDAL

Edward L. Stevens, Malone

## CLARK ORIGINAL ORATION PRIZE

Robert J. Hughes, Remsen

## TRUAX PRIZE SCHOLARSHIP IN GREEK (JUNIORS)

Duncan C. Lee, Franklinsville

## HUNTINGTON PRIZE SCHOLARSHIP IN MATHEMATICS (JUNIORS)

Albert E. Stuart, Franklin

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## Department of chemistry and mineralogy

## GENERAL CHEMISTRY

The junior class receives a course of instruction in general chemistry, which includes recitations from the text-book, and lectures illustrated by experiments.

## AGRICULTURAL CHEMISTRY

A course in scientific agriculture is given to the senior class. The same method of instruction is adopted as in general chemistry, the course consisting of recitations from the text-book, followed by short lectures from the professor, explaining and illustrating the next day's lesson. The microscope is freely used in the study of plant structure, and facilities are given to the



class to become acquainted with the facts on which this science is based. Special instruction in the use of the microscope is also given when desired.

#### ANALYTIC CHEMISTRY

After the course in general chemistry is completed, a thorough course in qualitative analysis may be taken, for which each student has his own desk in the laboratory, with a suitable supply of apparatus, and goes over a definite course of experimental work, until he has attained facility in manipulation, as well as a knowledge of the subject which prepares him to take up quantitative analysis, medical chemistry, or some other more advanced branch connected with the general subject.

#### MINERALOGY

The course in mineralogy is arranged so as to give as complete a knowledge of the subject as the time will allow. Each student is provided with a desk and the needed apparatus, and ample time is given for the actual testing of all common minerals and many of the rarer ones.

Crystallography is taught by the aid of a collection of models representing all its more important forms, and the students are taught to distinguish them not merely by inspection, but by a careful comparison of their mathematical relations.

#### Department of intellectual philosophy

In this department intellectual philosophy is taught by means of text-books, lectures, discussions and essays. Text-book: Hamilton's Mental science. The first term of the senior year is devoted largely to this text-book, and to the work of imparting the radical principles of mental science.

During the second and third terms more advanced instruction will be given. Lectures will be given more freely than during the first term.

#### Department of law, history, civil polity and political economy

The text-book is the basis of instruction in this department.

Studies in history are selected and pursued with special reference to their bearing on the other branches of this department. A careful investigation of the industrial history of nations accompanies the study of political economy as a science; and lectures

on the history of law and of institutions with suggestions as to proper course of reading, supplement the text-books on municipal and constitutional law.

In political economy and other studies of this department, the class is divided into sections for exercises in extemporaneous debate. Each week, a subject previously allotted is discussed by one section of the class. With the announcement of the subject, authorities bearing on it are given, and the students present the results of their investigation in their debates.

The instruction in municipal law is not wholly technical nor intended solely for those who are to enter the legal profession. Its scope is wide, and its aim is to acquaint the student with the leading principles of legal science, and to give him a clear and accurate conception of our legal system as a whole.

In studying civil polity, the constitution of the United States is the central object of attention. The leading features of our political law and development, however, are carefully compared with those of other countries, especially of England, in order that a full view of the fundamental principles of constitutional law may be obtained.

### Department of Greek

The course in Greek begins with a thorough review of the grammar, and the reading of Greek authors is attended with critical exercises in etymology, syntax and prosody. Frequent reviews are called for. The critical study of New Testament Greek is continued for two years, with exercises each Monday morning.

### Department of Latin

The English method of pronouncing Latin is used and recommended. In reading the Latin authors, accuracy in pronunciation and translation, as well as a thorough knowledge of syntax, is insisted on. To this end the study of the grammar is carried on in connection with the reading. The authors read, are also studied with reference to the thought and style, and largely in their relations to the times they represent. Beginning with the second freshman term, the study of Roman history is carried on till the close of sophomore year. In connection with the 21st book of Livy, the history of the Punic wars is taken up. The Odes of Horace are read in connection with the history of the civil wars — the death of Cæsar and the succession of Augustus. The Germania

and Agricola are naturally attended by the study of the imperial history from Tiberius to Nero, inclusive; while in reading the Histories of Tacitus, the student is aided by broader studies of the period from the death of Nero to the rise of Vespasian.

### Department of French, German, Anglo-Saxon and philology

1 *French and German* are required during sophomore year, one term each, with an additional hour for German on Thursdays through the year. In this time a thorough acquaintance with grammar and a reading knowledge are aimed at. The oral method is employed with the aid of Chardenal's courses in French, and Lodeman's manual in German, so that from the very outset the student's ear may be trained.

As electives, French may be carried to the end of junior year, and German to the end of the second term of senior year, in regular progressive courses from which the student cannot well drop more than one term in each language. An acquaintance with the masterpieces of French and German literature, a thorough, practical and philologic knowledge of the language are aimed at. Along with the elective history of junior year, French and German historic prose is read. Senior year, German lectures are delivered and the recitations are largely conducted in German.

These studies will include:

(a) Readings from the classical literature of France and Germany. The readings vary from year to year, but Molière's Comedies, Schiller's Wallenstein, Lessing's Prose and Minna Von Barnhelm, and Goethe's Faust 1 and 2, are always read.

(b) Higher grammar, including phonetic laws, the history and development of forms, the history of each language, with special reference to the relations of English and German, and French and English.

(c) Analysis and synthesis of English, French and German sounds, with the aid of Sweet's Hand-book of phonetics and sound notation, Whitney's Elements of English pronunciation.

(d) Outlines of the history of French and German literature.

(e) Prose composition once a week during sophomore year, and later on topics of special difficulty in the grammar, chosen from Lodeman's Manual. Critical essays on the authors studied.

2 *Anglo-Saxon* — Sweet's Primer and reader, with translation into German, and lectures on historic and comparative grammar,



with the aid of Kluge's and Skeat's Etymological dictionaries, Paul's Principles of language history and Whitney's Life and growth of language, Skeat's Principles of English etymology, and Sweet's History of English sounds.

3 Lectures are given on *comparative philology*, and on the *science of language*, with the aid of Paul's Principles of language history, Whitney's and Sievers' articles on philology in the Encyclopedia Britannica, and Wheeler's monograph on analogy.

### Department of mathematics

The required work of the mathematical department extends through the first five terms of the course. There are four terms of elective study; two in the calculus, and two in special higher work, including for this year the subjects of determinants and trilinear coordinates.

Written reviews are required at frequent intervals.

### Department of elocution, rhetoric and English literature

1 Rhetoric is studied by the freshman class during the first term from Hill's Principles of rhetoric. The study of the text-book is supplemented by the study of synonyms, by written exercises in criticism and the different kinds of discourse, and by illustrations of style from English classics.

2 Class instruction with individual drill in elocution is given during the second term of freshman year. Competitors in the prize exhibitions receive special drill in oratory.

3 English literature is studied by the sophomores during the second term. An outline history is obtained from Stopford Brooke's Primer of English literature. In addition to this work, the sophomores make a special study of one author in each of the chief periods; and each student is expected to select two authors from a course for private reading.

4 Essays are written each term by members of the freshman and sophomore classes, on subjects assigned by the professor; and these essays are returned to the writers with corrections and suggestions concerning style.

5 *Electives* — Four terms of electives are given, two in the junior year and two in the senior year. It is the purpose to vary this work in different years, yet to study the most directive and stimulating authors and eras.



The course for the year 1889-90 includes the Elizabethan drama, the literature of the 17th century, English poetry from Wordsworth to Browning, and lectures on American authors.

### Department of astronomy

#### LITCHFIELD OBSERVATORY

The astronomic professorship and the observatory have been very liberally endowed by the late Hon. Edwin C. Litchfield, LL. D., of Brooklyn.

FRESHMAN CLASS		SOPHOMORE CLASS		JUNIOR CLASS		SENIOR CLASS	
Hours per week		Hours per week		Hours per week		Hours per week	
3	Homer, Greek grammar	4	Demosthenes' De corona	FIRST TERM		REQUIRED	
4	Cicero's De senectute and De amicis, Latin composition, Roman history, Latin grammar reviewed	3	Spheric trigonometry, surveying, Germania and Agricola, Roman history	6	Physics	2	Constitutional law
3	Geometry	4	Tacitus' Germania and Agricola, Roman history	1	Biblical study—Lectures	5	(3) Philosophy of the mind. (2)
5	English—Rhetoric, Crabbe's English—Synonyms	1	Bible—Acts, Greek Testament	2	English composition and declamation	1	Logic
1	Bible—The Gospels, Greek Testament	4	German grammar and reader	4	Aschylus' Agamemnon	2	Natural religion—lectures
2	English composition and declamation	2	English composition and declamation	4	Calculus	2	Debate and orations
				2	French—Molière's Le médecin malgré lui, Corneille's Horace, Aubert's littérature Française	4	History of civilization
				2	The Elizabethan drama—Rolfé's Shakespeare	4	Mineralogy
				4	German-Schiller's Jungfrau von Orléans, Heine's Prosa	4	German—(3) Goethe's Faust, (1) Advanced grammar
						2	Analytic chemistry
							English literature—poetry from Wordsworth to Browning
SECOND TERM							
4	Livy, books 21 and 22, Latin composition, Roman history	6	Analytic geometry	REQUIRED		REQUIRED	
4	Xenophon's Memorabilia	4	English literature, History of English language, Study of authors by periods	6	General chemistry	4	Moral science
2	Elocution, lectures on Voice-culture	1	Bible—Acts, Greek Testament	1	Biblical study—lectures	1	Natural religion—lectures
5	Algebra	4	French grammar	3	English composition, debate and declamation	2	Constitutional law continued, History of American politics
1	Bible—The Gospels, Greek Testament	1	German grammar and exercises	4	Terence, Roman literature	2	Debate and orations
2	English composition and declamation	2	English composition and declamation	4	Sophocles' Antigone	4	Elements of municipal law
				4	Early American history	4	Philosophy of the mind
				2	French—Crane's Le roman-tisme Française and La Société Française au 17th siècle, Aubert continued	4	Geology
				2	German—Lessing's minna von Barnhelm	4	Hebrew
						4	Analytic chemistry continued, Medical chemistry
						4	German—Schiller's and Lessing's tragedies, Lessing's Prosa

<sup>1</sup>Chemistry is extended to eight hours, mineralogy to seven hours, which count for four.

FRESHMAN CLASS		SOPHOMORE CLASS		JUNIOR CLASS		SENIOR CLASS	
Hours per week		Hours per week		Hours per week		Hours per week	
5	Horace's Odes, Roman history	4	Idyls of Theocritus	4	Astronomy	1	REQUIRED
6	Herodotus and Thucydides,	4	Selections from Tacitus, Ro-	2	History of legal institutions	6	Evidences of Christianity —
4	Greek history	1	man history	1	Theism — lectures	2	lectures
1	Plane and spherical Trigo-	1	German grammar and exer-	3	English composition, debate		Political economy, History of
1	nometry	1	cises		and declamation		government revenue
2	Bible — The Gospels, Greek	2	Bible — Acts, Greek Testament	4	ELECTIVE		Debate and orations
	Testament		English composition and de-	4	'Analytic chemistry		
	climation		climation	4	French — Molière's comedies,		ELECTIVE
					Historic grammar, Crane's	4	Scientific agriculture
		4	French — Aubert's littérature		Le Promantisme Français	4	Municipal law
		6	Française, French grammar	2	German — Goethe's prose	2	Natural history
			Calculus, Modern geometry —	2	English literature — Lectures	4	Hebrew
		2	lectures		on authors of 17th and 18th	4	History of philosophy
			German — Brandt's Reader,		centuries, History of English	2	American literature
			Schiller's Tell, German syn-		prose.		
			tax				

<sup>1</sup>Chemistry is extended to eight hours, mineralogy to seven hours, which count for four.

## REQUIREMENTS FOR GRADUATION

The whole course of instruction occupies four years, and students in the several classes are usually required to attend three exercises each day. The degree of bachelor of arts is conferred upon students who complete this course.

Graduates of three years' standing, who have continued their studies, are entitled to the degree of master of arts, on application to the president.

## BUILDINGS

Three main buildings, four story stone, five class rooms, 50 seats each. Church or chapel, four story stone, three class rooms, 50 seats each. Art building, brick. Library, three story brick. Laboratory, one story wood, one class room, 50 seats. Museum, two stories, one class room, 50 seats. Observatory, two story wood. Gymnasium, one story wood. President's house, three story wood. Silliman hall, Y. M. C. A., three story brick and stone, built 1889.

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## HOBART COLLEGE

*Geneva*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
29 Mr	1813	Regents incorporated Geneva Academy.
11 Je	1821	<sup>1</sup> Branch Theological School or "Interior School of Geneva" opened in academy under patronage of Trinity church vestry.
11 F	1822	Trustees of academy applied for college charter.
10 Ap	"	Application granted conditionally. At end of three years funds producing \$4,000 annually must be secured.
20 Jl	1824	Formal renunciation of claims in <sup>1</sup> Branch Theological Seminary executed by Geneva interest; confirmed two years later.
		" Course for English diploma established. Changed later to "English course."

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To be considered a branch of the General Theological Seminary in New York.



Month	Year	
1 F	1825	Trustees presented petition to regents. Funds (as above) had been secured.
8 F	"	Charter granted (dated 5 Ap). Power to confer degrees. 24 trustees.
24 My	"	Trustees organized.
	1835	Medical department established.
	"	Application made to Society for Promotion of Religion and Learning for relief; granted a year later.
	1850	Application made to Trinity church of New York. Granted on condition that name be changed and needy young men receive free education.
10 Ap	1852	Legislature changed name to Hobart Free College at Geneva. Medical department to be known as Medical Institution of Geneva College.
	1855	Charter Namended. ine trustees a quorum. Seven trustees necessary to legislate.
27 Mr	1860	Regents changed name to Hobart College.
15 Mr	1861	Legislature confirmed above change. Medical school to be known as Geneva Medical College.
	1872	Medical College removed to Syracuse to become department of Syracuse University.
20 F	1874	Charter amended. Certain acts relating to election and organization of trustees repealed.
		Hobart College is the college of five dioceses of New York. Bishops of these dioceses visitors. Rector of Trinity church also trustee and visitor.

### TRUSTEES

Elected		
1884	President, Rev. Eliphalet N. Potter, LL. D., D. C. L., S. T. D., ex officio.....	Geneva
1886	Chairman, Hon. Levi P. Morton, LL. D.....	New York
1885	Vice-Chairman, Douglas Merritt.....	Rhinebeck
1884	Treasurer and Secretary, P. N. Nicholas, M. A.,	Geneva
1855	Hon. James C. Smith, LL. D. ....	Canandaigua
1856	William B. Douglas .....	Rochester
1863	Rev. Morgan Dix, S. T. D., D. C. L.....	New York
1868	Alexander L. Chew.....	Geneva
1871	Arthur P. Rose, M. A.....	"
1874	Hon. S. H. Hammond, M. A., D. C. L.....	"

## Elected

1876	Rev. Henry R. Lockwood, S. T. D.....	Syracuse
1876	Hon. S. R. Welles, M. A., M. D.....	Waterloo
1877	Peter Richards .....	Geneva
1879	Rev. W. W. Battershall, D. D.....	Albany
1880	William H. DeLancey, M. A .....	New York
1881	John McDonald, M. A. ....	" "
1883	William J. Ashley, M. A.....	Rochester
1883	Hon. Sterling G. Hadley .....	Waterloo
1884	Hon. James M. Smith, LL. D.....	Buffalo
1888	Rev. John Brainard, D. D. ....	Auburn
	Rt. Rev. the Bishop of Western New York, ex officio	

## APPOINTED DURING YEAR

1890	William H. Walker.....	Buffalo
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## VACANCIES

Rt. Rev. F. D. Huntington, D. D., Syracuse, term expired 25 Je  
1890

## ADMINISTRATION

Figures in column at left give first year of service in Hobart.

1884 President, Rev. Eliphalet Nott Potter, LL. D., D. C. L., S. T. D.

B. A. Union 1861, M. A. 1864; S. T. D. Columbia 1871; LL. D. Williams 1880; D. C. L. Trinity 1889; First professor, Lehigh University, 1865-71; President, Union 1871-84; Chancellor, Union University 1873-84; President, Hobart 1884-; Advocate regent and general secretary of the Church university board of regents 1889-; Author of numerous contributions to religious periodical literature.

1884 Dean, William Pitt Durfee, Ph. D.

B. A. Michigan University 1876; Ph. D. Johns Hopkins 1883.

1884 Treasurer and Secretary, P. N. Nicholas, M. A.

B. S. Hobart 1866, M. A. 1885.

1869 Librarian and Registrar, Charles Delamater Vail, M. A.

B. A. Hobart 1859, M. A. 1862; Tutor mathematics, Hobart 1869-70; Adjunct Horace-White professor of rhetoric, elocution and of the English language and literature 1872-88, Professor of same 1882-; Librarian and registrar 1873-; Instructor in elocution 1888-; Member Modern Language Association of America.

- 1889 Chaplain, Rev. Rob Roy MacGregor Converse, M. A., S. T. D.  
 B. A. Washington and Jefferson College 1867, M. A. 1870; S. T. D.  
 Griswold College, Iowa 1890; Instructor in astronomy and  
 mathematics, Washington and Jefferson College 1868.

## INSTRUCTION

Figures in column at left give first year of service in Hobart and years spent in teaching.

- 1884 Rev. Eliphalet Nott Potter, LL. D., D. C. L., S. T. D. Presi-  
 18 dent and Professor of Christian Ethics, Political Economy  
 and the Constitution.

See also "Administration."

- 1868 Hamilton Lanphere Smith, M. A., LL. D. Prendergast  
 39 Professor of Astronomy and Natural Philosophy.

B. A. Yale 1839, M. A. 1842; LL. D. Trinity 1871; Professor  
 natural philosophy and astronomy, Kenyon College 1853-68;  
 President American Society of Microscopists 1880, 1885;  
 Member Connecticut Academy of Science; Microscopical  
 Society of Edinburgh; Honorary Fellow Royal Microscopical  
 Society, London Quekett Club, London 1872; Honorary  
 Member Microscopical Society Belgium. Author of articles  
 on microscopy in scientific periodicals.

- 1868 Joseph Hetherington McDaniels, M. A. Professor of the  
 28 Greek Language and Literature.

B. A. Harvard 1861, M. A. 1872; LL. D. Griswold College, Iowa  
 1890; Member American Philological Society.

- 1869 Charles Delamater Vail, M. A. Instructor in Elocution.  
 27 See also "Administration."

- 1871 Francis Philip Nash, LL. B., M. A. Hobart Professor of  
 16 the Latin Language and Literature.

B. A. Harvard 1856, LL. B. 1859, M. A. 1866.

- 1881 Charles John Rose, M. A. Professor of the German and  
 10 French languages and Adjunct Professor of history, 230  
 Main st.

B. S. Hobart 1876, B. A. 1877, M. A. 1881; Member Modern  
 Language Association; Diploma from Artists' Schools of  
 Royal Conservatory of Music, Stuttgart 1879.

- 1884 William Pitt Durfee, Ph. D. Professor of Mathematics and  
 12 Instructor in Chemistry.

See also "Administration."

- 1889 Rev. Rob Roy MacGregor Converse, M. A., S. T. D.  
3 Instructor in Mental Philosophy and the Evidences of Christianity.

See also "Administration."

- 1890 Milton Haight Turk, M. A., Ph. D. Adjunct Professor of Rhetoric and the English Language and Literature.

Ph. D. Leipzig.

- 1887 Rev. Lansing Swan Humphrey, M. A. Instructor in  
2 Hebrew.

B. A. Hobart 1884, M. A. 1887.

- 1880 David Francis Lincoln, M. A., M. D. Lecturer on Physi-  
15 ology and Hygiene.

B. A. Harvard 1861, M. A. and M. D. 1864; (Acting) Professor of Latin, Hobart 1880-81; Lecturer on physiology and hygiene 1889-; Author Electro-therapeutics, 1875, School and industrial hygiene, 1880.

- 1887 Capt. Charles Washington Fairfax. Instructor in Gymnas-  
4 tics.

Captain Independent Battery 94, Geneva 1886-89.

- William Clark, M. A., LL. D. Lecturer on Modern History and Religious Thought.

M. A. Hertford College Oxford 1865; Honorary LL. D. Hobart 1888; Professor of philosophy, Trinity college, Toronto 1883; Baldwin lecturer in the University of Michigan 1887; Translator of Heples' History of the Councils, volumes 1 and 3; Author Witnesses to Christ, Baldwin lectures, 1888, Savonarola, his life and times, 1890.

- 1885 Henry Coppee, LL. D. Lecturer on Philosophy of  
43 History.

Graduate of West Point; M. A. University of Georgia; D. D. University of Pennsylvania and Union; Professor of English literature, University of Pennsylvania 1855-66; President Lehigh University 1866-75; Professor of English literature and the philosophy of history 1875; Sometime lecturer on history and English literature, Union; Regent of Smithsonian Institute 1874-; Author Elements of rhetoric, 1857, Elements of logic 1858, English literature considered as an interpreter of English history, History of the conquest of Spain by the Arab Moors.



- 1888 Allan Marquand, Ph. D., L. H. D. Lecturer on the  
10 History of Art.

B. A. Princeton 1874; Ph. D. Johns Hopkins 1880; L. H. D. Hobart 1888; Fellow in logic and ethics, Johns Hopkins 1878-81; Tutor in Latin and lecturer on logic, Princeton 1881-2; Instructor in the history of art 1882-3; Professor of the history of art 1883- ; Editorial contributor to American journal of archeology.

- 1890 Rev. Herbert M. Denslow, B. A. Lecturer on Botany.

- 4 B. A. Yale 1873; Instructor in natural science, Olivet College 1874-5; Tutor, Yale 1875-7; Member American Society of Biblical Literature and Exegesis.

#### VACANCIES

- 1889 Henry Burrowes Lathrop, B. A. (Harvard) Adjunct pro-  
2 fessor of the English language and literature. Resigned  
26 Je 1890.

#### APPOINTED DURING YEAR

Henry Burrowes Lathrop, B. A.

See also "Vacancies".

Milton Haight Turk, M. A., Ph. D. Adjunct professor of rhetoric and the English language and literature. Elected 1 Jl 1890.

Rev. Herbert M. Denslow, B. A. Lecturer on Botany.

#### HONORARY DEGREES

- |            |                             |       |                   |
|------------|-----------------------------|-------|-------------------|
| Mus. Doc.— | Gerrit Smith                | ..... | New York          |
| M. A.—     | Rev. M. C. Hyde             | ..... | Buffalo           |
|            | F. Hunter Potter            | ..... | Morristown, N. J. |
|            | William F. Shero            | ..... | Rochester         |
|            | Prof. J. F. Soul            | ..... | Univ. of Wyoming  |
|            | Prof. Wm. L. Sprague        | ..... | Buffalo           |
|            | George W. Vanderbilt        | ..... | New York          |
| LL. D.—    | Rev. Anson R. Graves        | ..... | Kearney, Neb.     |
|            | Rev. Telfair Hodgson, D. D  | ..... | Sewanee, Tenn.    |
|            | Rev. Edward H. Jewett, D. D | ..... | New York          |
| S. T. D.—  | Rev. James W. Ashton        | ..... | Olean             |
|            | Rev. Lewis Halsey           | ..... | Farmer Village    |
|            | Rev. Reginald M. Kirby      | ..... | Potsdam           |
|            | Rev. William Lawrence       | ..... | Cambridge, Mass.  |
|            | Rev. H. L. Ziegenfuss       | ..... | Poughkeepsie      |

## COLLEGE APPOINTMENTS

Valedictory, Frank Howard Nelson

Salutatory, Newton Foster Vail

Philosophical oration, Frank Flood German

<sup>1</sup>Rutger Bleecker Jewett<sup>1</sup>John C. Kirtland

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

## THOMPSON PRIZES

	Value
<i>Freshmen</i> — George W. Davenport.....	\$12 50
Walter M. Pegram .....	12 50
<i>Sophomores</i> — James M. Johnston .....	12 50
Louis M. Sweet.....	12 50
<i>Juniors and seniors</i> — George Robinson.....	50 00

## SOPHOMORE EXHIBITION PRIZES

First, Horace C. Hooker.....	6 00
Second, Frank A. Ramsey.....	6 00

## WHITE ESSAY PRIZES

First, Louis M. Sweet.....	20 00
Second, Moses H. Douglass.....	10 00

## WHITE RHETORICAL PRIZE

Charles E. Spalding .....	30 00
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## COBB ESSAY PRIZES

First, John C. Kirtland.....	20 00
Second, Ernest V. Collins.....	10 00

## REQUIREMENTS FOR ADMISSION

See table 2.

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<sup>1</sup> Name of honor not reported.

## COURSES OF STUDY

## FRESHMAN CLASS

COURSE IN LETTERS AND SCIENCE	
CLASSICAL COURSE	
TRINITY TERM	
Greek — Homer: <i>Odyssey</i> , begun; Greek grammar; Greek composition	Modern Languages — Preparatory work in German and French
Latin — Cicero: One of the philosophical works; Latin grammar	English — English grammar (Bain's); Weekly exercises in English composition
English — English grammar (Bain's); Weekly exercises in English composition	Elocution — Pronunciation; reading; gesture; declamations
History — Thompson's English history (Freeman); selections from Green's History of the English people, throughout the year	History — Thompson's English history (Freeman); selections from Green's History of the English people, throughout the year; Freeman's Outlines of history
Mathematics — Geometry (Chauvenet)	Mathematics — Geometry (Chauvenet)
EASTER TERM	
Greek — Homer: <i>Odyssey</i> , eight books; Lysias, or the Memorabilia; Greek moods and tenses (Goodwin); Greek composition	Modern Languages — Preparatory work in German and French
Latin — Livy; Horace: the Odes, two books; Latin grammar and composition	English — Rhetoric (Gunning's Practical elements); Study of English prose masterpieces, with lectures; Weekly themes
English — Rhetoric (Gunning's Practical elements); Study of English prose masterpieces, with lectures; Weekly themes	Elocution: Pronunciation; reading; gesture; declamations
History — Thompson's English history, finished	History — Thompson's English history; Freeman's Outlines of history
Mathematics — Solid geometry (Chauvenet); Algebra	Mathematics — Solid geometry (Chauvenet); algebra (Wentworth)
	Chemistry — Inorganic, finished

## CLASSICAL COURSE

Greek and Latin, see page 644

English — Rhetoric (Genung, finished); study of English prose masterpieces, with lectures; Fortnightly themes

Elocution — Pronunciation; reading; gesture; declamations

History — Freeman's Outlines of history

Mathematics — Trigonometry (Wells)

Chemistry — Inorganic (Remsen)

## TRINITY TERM

German — German grammar (Joynes-Meissner); German reader (Brandt)

French — Edgren's grammar; prose selections

English — Rhetoric (Genung); Study of English prose masterpiece, with lectures; Fortnightly themes

Oratory and Forensics — Two orations; two debates

Logic — Coppée and Jevons, with lectures

Mathematics — Trigonometry (Wells)

Physics — Atkinson's Ganot, Books 1-3, with lectures

German — German classics (selections); German prose composition

## EASTER TERM

Greek and Latin, see page 644

English — Poetry of the 19th century (Ward's English poets, vol. 4; Wordsworth to Rossetti), with lectures; Fortnightly themes

Elocution — Pronunciation; reading; gesture; declamations

History — Freeman's Outlines of history

Mathematics — Trigonometry (Wells); Analytic geometry (Hardy)

Chemistry — Inorganic

## COURSE IN LETTERS AND SCIENCE

French — Littérature Française (Aubert); French classics (selections) Victor Hugo, A. Daudet and others (selections); Edgren's grammar  
English — Poetry of the 19th century (Ward's English poets vol. 4), with lectures

Oratory and Forensics — Two orations; two debates

Logic — Coppée and Jevons, with lectures

Mathematics — Trigonometry (Wells); analytic geometry (Hardy)

Physics — Atkinson's Ganot, with lectures

Astronomy — Young



## JUNIOR CLASS

## CLASSICAL COURSE

Greek and Latin, see page 644

English—Literature:—Lectures on the history of the English literature from the beginning to 1800 (Ward's English poets); Monthly essays 2 Philology (elective):—Anglo-Saxon; Sweet's Primer and reader; Cook's Sievers' Grammar; Orosius; Ælfric; Elenæ  
Two orations; Two debates  
German—1 German grammar (Joynes-Meissner); German reader (Brandt) 2 Advanced work in reading and conversation, with lectures on German literature (elective)  
Logic—Coppeé and Jevons, with lectures  
Natural philosophy—Physics (Atkinson's Ganot) with lectures  
Physiology and hygiene—Lectures

## TRINITY TERM

German (elective)—Advanced work in reading and conversation, with lectures on German literature  
English—1 Lectures on the history of the English literature from the beginning to 1800 (Ward's English poets); Monthly essays, 2 Study of Shakspeare  
Two orations; Two debates  
Metaphysics—Psychology (Baldwin and James); Physiological evidences—Lectures  
Political economy—Recitations, lectures, debates  
Mathematics—Descriptive and advanced geometry, or Differential and integral calculus  
Astronomy—Young  
Natural science—Common minerals and rocks (Crosby); Geology (Dana)

## COURSE IN LETTERS AND SCIENCE

## EASTER TERM

Greek and Latin, see page 644

English—See under Trinity term  
Two orations; Two debates  
German—1 German classics (selections); German prose composition, 2 Advanced work in reading and conversation, with lectures on German literature (elective)  
Logic—Coppeé and Jevons, with lectures  
Natural philosophy—Physics (Atkinson's Ganot) with lectures  
Astronomy—Young

French (elective)—Advanced work in reading and conversation, with lectures on French literature  
English—1 See under Trinity term, 2 Study of Chaucer (Sweet's Second middle English primer; Morris and Skeat's editions)  
Two orations; Two debates  
Metaphysics—History of Philosophy (Schwegler and Ueberweg); Lectures on Kant's Critique of pure reason  
Ethics—Sidgwick, Calderwood, Peabody  
Political economy—Recitations, lectures, debates  
Mathematics—Descriptive and advanced geometry, or Differential and integral calculus  
Natural science—Meteorology (Loomis); Earth and man (Guyot); Geology (Dana)

## SENIOR CLASS

## CLASSICAL COURSE

## TRINITY TERM

Greek and Latin — Elective with any of the following studies in which a special course is provided. See page 644

English — 1 Literature: — Study of Shakspeare. Monthly essays; 2 Philology (elective): — Old English: Sweet's First middle English primer; Morris and Skeat's Specimens, parts 1 and 2; or Anglo-Saxon; Beowulf. Two orations; two debates

French — 1 Edgren's Grammar, begun; prose selections. 2 Advanced work in reading and conversation, with lectures on French literature (elective)

Metaphysics — Psychology (Baldwin and James); Physiological psychology (Ladd)

Evidences — Lectures

Political economy — Recitations, lectures, debates

Astronomy — Young

Natural science — Common minerals and rocks (Grösbey); Geology (Dana)

## EASTER TERM

Greek and Latin, as in Trinity term

English — 1 Literature: — Study of Chaucer (Sweet's Second middle English primer; Morris and Skeat's editions); Monthly essays. 2 Philology (elective): — Lectures on the origin and history of the English language

Two orations; two debates

French — 1 Littérature Française (Aubert); French classics (selections); Victor Hugo, A. Daudet and others (selections); Edgren's Grammar, finished. 2 Advanced work in reading and conversation, with lectures on French literature (elective)

Metaphysics — History of philosophy (Schwegler and Ueberweg); Lectures on Kant's Critique of pure reason

Ethics — Sidgwick, Calderwood, Feabody

Political economy — Recitations, lectures, debates

Constitution of the United States — Text-book and lectures

Natural science — Meteorology (Loomis); Earth and man (Guyot); Geology (Dana)

## COURSE IN LETTERS AND SCIENCE

## BOTH TERMS

1 German — Lessing, Schiller, Goethe; selections from later authors  
2 French — French classics: Corneille, Molière, Racine; Modern French literature (selections)

3 English — 1 Anglo-Saxon: — Sweet's Primer and reader; Cook's Sievers' Grammar; Orosius; Ælfric; Elene 2 Old English: — Sweet's First middle English primer; Morris and Skeat's Specimens, parts 1 and 2; Lectures on the origin and history of the English language

4 Mathematics — Differential and integral calculus, or descriptive and advanced geometry (analytic and synthetic)

5 Chemistry — Inorganic chemistry; Laboratory work

## COURSE IN LETTERS WITH LATIN

This course differs from the three years' course in letters and science only in substituting in the first year for chemistry the Latin of the freshman year, classical course.

## GREEK AND LATIN COURSES

Instruction in Greek and Latin, after the freshman year, is given, irrespective of class, in two parallel courses. Course A, the easier, does not carry honors; but those who take it and seek honors are required to do extra work, which is assigned from term to term. Course B is, itself, an honor course requiring no special biennial examination. Of this course reading at sight is a special feature and in Latin the Roman pronunciation is required. Both courses are open to sophomores, juniors and (as an elective study) to seniors. The courses have been arranged for the next three years as follows:

## 1 GREEK

1890-91	1891-92	1892-93
<p><i>Course A</i> Demosthenes: Olynthiacs and Philipics Aristophanes: Birds Sophocles: Ajax</p> <p><i>Course B</i> Attic orators from Antiphon to Isæus (selections) Æschylus: Agamemnon Aristophanes: Clouds</p>	<p><i>A</i> Theocritus Greek lyric poets (selections) Plato (literary selections)</p> <p><i>B</i> Pindar (selections) Plato: Republic, or Aristotle: Ethics</p> <p>2 LATIN</p>	<p><i>A</i> Herodotus and Thucydides (selections) Euripides: Alcestis Æschylus: Persæ Greek history</p> <p><i>B</i> Herodotus (at sight) Thucydides (books 6, 7) Euripides: Medea Sophocles: Edipus Rex</p>
<p><i>A</i> Horace: Epistles or Satires Seneca Virgil: Æneid (books 7, 8) Latin prose</p> <p><i>B</i> Tacitus: Annals [Suetonius: Historia Augusta] Poets of the Republic [Buntus' Remains] Reading at sight: Latin prose</p>	<p><i>A</i> Terentius Tacitus: Germanica and Agricola Virgil: Æneid (books 9, 10) Latin prose</p> <p><i>B</i> Juvenal and Persius [Martial: Suetonius (Peck)] Plautus and Terentius [Seneca the tragic] Horace: Satires and Epistles Latin prose and verse</p>	<p><i>A</i> Seneca: Deira Horace: Satires Ovid: Fasti Latin prose</p> <p><i>B</i> Tacitus: Annals [Tacitus: Agricola, Germania] Cicero: Epistles [Pliny and Seneca: Epistles Cicero: Tusculan disquisitions Epistolary Latin]</p>

<sup>1</sup> Greek composition in both courses throughout the year.

<sup>2</sup> The authors in brackets are recommended as a course of parallel reading.

## REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts is conferred on those students who have completed the entire classical course, and passed satisfactory examinations thereupon.

The degree of bachelor of letters is given to those who have satisfactorily completed the studies of the course in letters and science or the course in letters with Latin. To students who have completed satisfactorily the fourth year studies of the course in letters and science is given the degree of bachelor of science.

The degree of master of arts may be conferred on any bachelor of arts of this college, of three years' standing or upward, who shall give the faculty evidence of having made satisfactory progress in liberal studies after receiving the first degree.

## BUILDINGS

Church or chapel, two story stone, built 1863, floor area 4,980 sq. ft., value \$14,000. Dormitories in Geneva hall, four story stone, built 1821-22, floor area 12,136 sq. ft., value \$12,000. Dormitories in Trinity hall, four story stone and brick, built 1837-38, floor area 12,136 sq. ft., value \$12,000. Two class rooms in gymnasium, 56 seats. Science building, four story stone, built 1879-80, floor area 9,800 sq. ft., five class rooms, 120 seats, value \$9,000. Library, three story stone, built 1885-86, floor area 8,150 sq. ft., value \$25,000. Laboratory in science building. Museum in gymnasium. Observatory one story wood, built 1870, floor area 604 sq. ft., value \$1,500. Gymnasium three story brick, built 1886-87, floor area 7,911 sq. ft., value \$10,000. President's house, three story wood, built 1836-37, floor area 8,775 sq. ft., value \$8,000. Chaplain's house, four story brick, built 1883-84, floor area 5,220 sq. ft., value \$8,000. Janitor's house, one story wood, built 1829, floor area 1,288 sq. ft., value \$800. Boat house, one story wood, built 1877, floor area 1,650 sq. ft., value \$500. Hale house, three story wood, built 1831, floor area 5,360 sq. ft., value \$2,000. Post house, three story brick, built 1827, floor area 4,560 sq. ft., value \$3,000. Cuthbert house, three story brick, built 1825, floor area 2,640 sq. ft., value \$1,500. Gallagher tenant house, two story wood, built about 1840, floor area 1,248 sq. ft., value \$700. Total floor area of all stories 86,458 sq. ft., value \$108,000.



## ADDITIONAL INFORMATION

A committee has been appointed to increase the facilities of the college for scientific instruction.

In 1891-2, three scholarships, of the annual value of \$280, \$175 and \$150 respectively, will be awarded for conspicuous excellence at the examinations for admission to the classical course. The award will be based on the results of the regular September examinations.

UNIVERSITY OF THE CITY OF  
NEW YORK*New York*<sup>1</sup> CONSISTING OF

Department of Arts and Sciences  
Department of Law

Department of Medicine  
School of Pedagogy

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

- 20 O    1830    Convention met in New York to discuss the establishment of a university in the city of New York. Memorial addressed to legislature.
- 18 Ap    1831    Legislature created a corporation to be managed by council. Power to confer degrees. Subject to visitation of regents.
- O    1832    College work opened.
- Jl    1833    University building commenced; used in 1835; dedicated in 1837.
- 1835    Invention in the university of the recording telegraph.
- 2 Je    "    Plan of Hon. B. F. Butler for law school adopted by council but not carried out.
- ? 1837    Professorship created for educating teachers of common schools.
- "    Grammar School of the University of the City of New York established.

<sup>1</sup> See last item under historic sketch, also additional information p. 666.

- | Month | Year |   |
|-------|------|---|
| 27 Ja | 1841 | Medical department organized.   |
|       | 1853 | Medical faculty secured law, legalizing dissection in New York state.   |
|       | 1856 | Grammar School made integral part of University.  |
| 27 My | 1858 | Department of law organized.  |
|       | 1870 | Connection of Grammar School with University ceased   |
|       |      | “ Courses in arts and sciences made gratuitous.   |
|       | 1871 | Faculty of science and letters divided into a faculty of arts and a faculty of science. Parallel full courses of instruction have since been given.   |
| 12 Ja | 1883 | Regents amended charter by repealing certain acts and vesting all corporate rights in the council.  |
|       | 1886 | Graduate division organized; includes all examinations and courses of instruction offered by the university to candidates for the degree of master of arts, master of science, or doctor of philosophy. |
| 3 Mr  | 1890 | School of pedagogy established.   |
| My    |      | “ Voluntary alliance formed with Union Theological Seminary.  |

### TRUSTEES

#### Elected

- |      |   |          |
|------|---|----------|
| 1836 | President, Chas. Butler, LL. D., 78 Park av., | New York |
| 1871 | Treasurer, Wm. A. Wheelock, 320 Broadway,     | “        |
| 1883 | Secretary, William S. Opdyke, 20 Nassau st.,  | “        |
| 1846 | John Taylor Johnston .....                    | “        |
| 1862 | William Allen Butler, LL. D .....             | “        |
| 1864 | Howard Crosby, D. D., LL. D .....             | “        |
| 1865 | John E. Parsons .....                         | “        |
| 1869 | J. W. C. Leveridge .....                      | “        |
| 1872 | Alexander R. Thompson, D. D .....             | Brooklyn |
| 1874 | Samuel M. Hamilton, D. D .....                | New York |
| 1875 | John Hall, D. D., LL. D .....                 | “        |
| 1876 | Charles F. Deems, D. D., LL. D .....          | “        |
| 1881 | William Loring Andrews .....                  | “        |
| 1882 | William M. Halsted .....                      | “        |
| 1882 | Lemuel Skidmore .....                         | “        |
| 1882 | William M. Taylor, D. D., LL. D .....         | “        |
| 1882 | Hon. C. H. Van Brunt, LL. D .....             | “        |
| 1882 | Jenkins Van Schaick .....                     | “        |

## Elected

1883	Elbert B. Monroe	Southport, Ct.
1883	Roderick Terry, D. D.	New York
1884	David Banks	"
1884	Robert Schell	"
1884	Samuel Sloan	"
1885	Hon. Noah Davis	"
1887	George Alexander, D. D.	"
1887	George Munro	"
1887	William L. Skidmore	"
1889	Francis A. Palmer	"

## APPOINTED DURING YEAR

1889	Israel C. Pierson	"
1889	John Reid, D. D.	Yonkers
1890	Frederick Baker	New York
1890	Henry M. Sanders	"

## VACANCIES

Smith E. Lane, New York, term expired N 1889

Peter Carter, New York, resigned Je 1890

## DEPARTMENT OF ARTS AND SCIENCES

*Washington sq., New York*

For historic sketch see p. 646.

## ADMINISTRATION

Figures in column at left give first year of service in University of City of New York.

1881 Chancellor, John Hall, D. D., LL. D. . . . . 714 Fifth av.

Graduate of Royal college Belfast, Theological college Belfast; D. D. Washington and Jefferson college 1866; LL. D. Columbia, Princeton, Washington and Lee University; Commissioner of National education, Ireland, 1860-6, Chancellor ad interim University of City of New York, 1881-6; Chancellor 1886-; Author Papers for home reading, Questions of the day, God's word through preaching, Foundation-stones for young builders; Editor Evangelical witness 1860-7.

1884 Vice-Chancellor, Henry Mitchell MacCracken, D. D., LL. D.  
84 Irving pl.

B. A. Miami 1857; LL. D. 1886; D. D. Wittenburg 1878; Member American Church Historical Society, American Society Christian Philosophy, Society for Prevention of Crime, American Tract Society, American Institute of Civics, Author Lives of religious leaders, 1879.

1838 President, E. A. Johnson, LL. D., L. H. D.

Educated at Yale.

1885 Secretary, Daniel W. Hering, C. E.

Educated at Yale.

1860 Librarian, Henry M. Baird, D. D., LL. D.

Educated at University of the City of New York.

Assistant Librarian, William A. Kirkwood.

1875 Registrar, Charles B. Brush, C. E.

Educated at University of the City of New York.

Janitor, Henry A. Mathews.

## INSTRUCTION

Figures in column at left give first year of service in University of City of New York and years spent in teaching.

1838 E. A. Johnson, LL. D., L. H. D. Professor of the Latin Language and Literature.

See also "Administration."

1853 Richard H. Bull, Ph. D. Emeritus Professor of Civil Engineering.

Educated at University of the City of New York.

1856 Vincenzo Botta, Ph. D. Emeritus Professor of the Italian Language and Literature.

Educated at University of Turin.

1860 Henry M. Baird, D. D., LL. D. Professor of the Greek Language and Literature.

See also "Administration."

1860 George W. Coakley, LL. D. Professor of Mathematics and Astronomy.

Educated at Rutgers.

1867 T. Addison Richards, M. A. Emeritus Professor of Art.

1871 John J. Stevenson, Ph. D. Professor of Chemistry, Geology and Physiology.

Educated at University of the City of New York.

1875 Charles B. Brush, C. E., M. S. Professor of Civil Engineering.

See also "Administration."



- 1881 I. F. Russell, M. A., J. C. D. Professor of Political Science.  
Educated at University of the City of New York and Yale.
- 1882 Albert Horatio Gallatin, M. A., M. D.  
Educated at University of the City of New York.
- 1884 Henry M. MacCracken, D. D. Professor of Logic and Intel-  
10 lectual and Moral Philosophy.  
See also "Administration."
- 1884 William A. Houghton, M. A. Professor of History and  
Associate Professor of Latin.  
Educated at Yale.
- 1885 Daniel W. Hering, C. E. Professor of Physics.  
See also "Administration."
- 1885 Abram S. Isaacs, M. A., Ph. D. Professor of Hebrew and  
10 German, 2 W 14 st.  
B. A. University of the City of New York 1871, M. A. 1873, Ph. D.  
1878; Author A modern Hebrew poet, 1878; Editor Hebraica  
1879-81; Editor The Jewish messenger.
- 1888 Samuel M. Woodbridge, M. A. Instructor in Assaying.  
Educated at Rutgers.
- 1887 Frank F. Ellinwood, D. D. Professor of Comparative  
4 Religion.  
B. A. Hamilton 1849; Graduated Princeton Theological Semi-  
nary 1852; D. D. University of the City of New York 1865;  
Secretary Board of Foreign Missions of Presbyterian Church  
1871- .
- 1887 Jerome Allen, Ph. D. Professor of Pedagogy.  
Educated at Amherst.
- 1887 Wallace Wood, M. D. Professor of the History of Art.  
Educated at Ecole de Paris.
- 1888 Francis Hovey Stoddard, M. A. Professor of the English  
10 Language and Literature.  
B. A. Amherst 1869, M. A. 1886. Instructor of English, Uni-  
versity of California 1886-8; Member Modern Language  
Association, American Philological Association; Author  
References for students of miracle-plays and mysteries, 1887.
- 1888 Robert W. Hall, M. A., M. E. Assistant Professor of  
Chemistry.  
Educated at Princeton.

- 1888 Louis L. Tribus, M. S., C. E. Assistant in Civil Engineering.  
Educated at University of the City of New York.
- 1889 William Kendall Gillett, M. A. Professor Elect of the  
French and Spanish Languages.  
Educated at University of the City of New York.
- 1889 C. L. Speranza, M. A. Instructor in French. (For one  
year)
- 1889 Edgar D. Shimer, Ph. D. Associate Professor of Pedagogy.  
Educated at Muhlenberg.
- 1890 Daniel A. Murray, B. A. Acting Associate Professor of  
5 Mathematics, 36 Waverly pl.  
B. A. Dalhousie College, Halifax 1884; Tutor in Mathematics,  
Dalhousie College 1885-7; Fellow in Mathematics, Johns  
Hopkins 1889-90.

## LECTURERS IN SCHOOL OF PEDAGOGY

- 1890 E. H. Cook, Ph. D.
- 1890 Addison P. Poland, Ph. D.
- 1890 Edward R. Shaw, Ph. D.

## SPECIAL LECTURERS FOR 1890-91

W. H. P. Faunce, D. D.  
Hon. John Bigelow, LL. D.  
J. M. Buckley, D. D.  
Lyman Abbott, D. D.  
Marvin R. Vincent, D. D.  
W. Gilman Thompson, M. D.  
Henry Van Dyke, D. D.  
Elbert B. Monroe

## VACANCIES

- 1886 H. J. Messenger, Ph. D. Acting associate professor of mathe-  
matics. Term expired 1890.

## APPOINTED DURING YEAR

Daniel A. Murray, B. A. Acting associate professor of  
mathematics.

## HONORARY DEGREES

D. D.—Edward Abbott .....	Cambridge, Mass.
Charles E. Barnes .....	Hoboken, N. J.
Charles Cuthbert Hall .....	Brooklyn
Henry S. Jacobs .....	New York
John MacNaughton .....	Morristown, N. J.
Anthony R. Macoubrey .....	San Mateo, Fla.
William T. Sabine .....	New York
LL. D.—Samuel T. Speer .....	Brooklyn

## COLLEGE APPOINTMENTS

Alfred C. P. Opdyke, New York, and Gilbert L. Anderson, Brooklyn divided the first honor and took by lot the former the philosophical oration, the latter the valedictory.

Salutatory, William A. Kirkwood.....	New York
English oration, Charles S. Rice.....	Hoboken, N. J.
Scientific oration, Leslie J. Tompkins.....	New York

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Bailey Scholarships. William A. Kirkwood.....	\$350
A. Ogden Butler Philosophical fellowship. Alfred C. P. Opdyke .....	300
A. Ogden Butler Classical fellowship. Not awarded.....	300

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## UNDERGRADUATE TERM-COURSES

By a "term-course" is meant a period of study terminated by an examination, extending over not less than one term, and in some instances, over two or three terms. The letters A, B and C indicate the term; the number of hours taken each week of the term is indicated by the annexed figure.

## Language and literature

## LATIN

1 Livy, selections from first or third decade; Ovid, selections from the Fasti; Exercises in Latin prose composition. Freshman class, A-5.

2 Horace, Odes; Reading at sight in some oration of Cicero; Exercises in Latin prose composition. Freshman class, B-4.

3 Cicero, The Cato major and Laelius; Exercises in Latin prose composition; History of Roman literature. Freshman class, C-4.

4 Horace, Satires and epistles; Reading at sight in Cicero's Letters. Sophomore class, A-2.

5 Tacitus, Selections from the annals and the histories; Reading at sight in the Agricola and the dialogue; Terence, selections. Sophomore class, B-3.

6 Selections from Juvenal and Persius. Sophomore class, C-2.

7 Lucretius, Book I and selections from other books; Plautus, one or two plays. Junior class, B-2.

8 Selections from Catullus and the elegiac poets. Elective with French. Senior class, A-3.

9 Cicero, Rhetorical or philosophical writings. Elective with French. Senior class, B-1.

#### GREEK

1 Herodotus, Selections from the sixth, seventh, eighth and ninth books, with special attention to the dialectic and grammatic forms; Exercises in Greek prose composition. Freshman class, A-5.

2 Homer's Odyssey, first, fifth, sixth and eighth books; Exercises in Greek prose composition. Freshman class, B-4.

3 Xenophon, Memorabilia; Reading at sight in the Apology and Critio of Plato; Greek prose composition. Freshman class, C-4.

4 Demosthenes, the oration on the crown; Lectures on Greek archeology, illustrated with lantern views. Sophomore class, A-3.

5 Euripides, Select tragedies. Sophomore class, B-2.

6 Isocrates, the panegyric oration; Lectures on Greek literature. Sophomore class, C-3.

7 Sophocles, Select tragedies; Plutarch, De sera numinis vindicta. Junior class, C-2.

8 Plato, Select dialogues, Gorgias or Phædo. Senior class, A-2. Elective with French.

9 Critical study of the epistles of the New Testament; Lectures on Greek literature. Senior class, B-3. Elective with French.

NOTE—This University is associated with several others in the support of the American School of Classical Studies at Athens:



## GERMAN

1 Otis's Elementary German. Sophomore scientific, junior classical, A-5.

2 William Tell. Translation English into German. Sophomore scientific, junior classical, B-3.

3 Goethe's Faust. Translation English into German. Reading at sight. Sophomore, junior classical, C-3.

4 Rosenstengel's Reader of German literature, ballads and historical selections; Reading at sight. Translation English into German. Junior scientific, B-5. Elective with integral calculus and physics. Senior classical, optional.

5 Rosenstengel-Literary and scientific selections; At sight reading German novelette. Translation English into German; German conversation. Junior scientific, C-5. Elective with physics and physical geography. Senior classical, optional.

Occasional lectures given on subjects connected with German language and literature, and topics assigned for essay writing.

## FRENCH AND SPANISH

1 Languellier's method. Freshman scientific, A-5.

2 Languellier's method; French play or story; Translations from English into French. Freshman scientific, B-5.

3 Translations from English into French of play or story; of French play into English. Freshman scientific, C-5.

4 Translations; Contes contemporains. Sophomore scientific, B-2.

5 Translations; Contes contemporains. Sophomore scientific, C-2.

6 Languellier's method. Senior classical, A-5. Elective with Greek and Latin.

7 Languellier's method, with French play and translations from English into French. Senior classical, B-4. Elective with Greek and Latin.

*Spanish.* Optional courses not yet announced.

## ENGLISH

1 *English prose style*—Study of prose style and of representative prose authors, on the basis of Minto's Manual of English prose literature. Freshman classical, C-2. Freshman scientific, B-3, C-2.

2 *History of English literature* — Review of the growth and development of the literature, on the basis of Stopford Brooke's Primer and Morley's English writers. Sophomore, A-2.

3 *Science of rhetoric* — Study of the science of effective expression, on the basis of Spencer's Philosophy of style and Lewy's principles of success in literature. Sophomore, C-2.

4 *The essayists* — General survey; Study of selected examples from Bacon to Macaulay, Emerson and Matthew Arnold. Sophomore classical, B-3. Elective with mathematics.

5 *English poetry* — Study of selected masterpieces from Chaucer to Browning. Sophomore classical, C-3. Elective with mathematics.

6 *Edmund Burke* — Study of the life, opinions and works of Edmund Burke. Junior scientific, A-1.

7 *Old English* — Reading of simple prose; Study of old English literature and grammar. Senior scientific, A-5. Elective with analytic chemistry.

8 *Shakspeare* — Critical study of one or more plays. Senior classical, B-3. Senior scientific, B-3; Elective with Geology.

9 *Forensics* — A short study of the methods and principles involved in the writing of theses, orations and extended essays. Senior classical, B-1.

10 *Essays* — In connection with above courses throughout the year.

11 *Rhetorical exercises* — Half-hour daily, all classes, throughout the year.

#### HEBREW

1 Green's Grammar; Genesis; Grammatic analysis and exercises; translations. Optional. A-1, B-1, C-1.

2 Ruth; Selections from historical books and psalms; Grammatical analysis; Translations. Optional. A-1, B-1, C-1.

#### MATHEMATICS

1 Industrial drawing, Mahan. Freshman scientific, A-5.

2 Algebra, Wells' University, completed. Freshman, A-5.

3 Solid geometry, Byerly's Chauvenet, completed. Freshman, B-5.

4 Plane trigonometry, Wells'. Freshman, C-5.

5 Spheric trigonometry, Wells'. Sophomore, A-3.

6 Analytic geometry, Bowser. Elective to classical students with English literature. Sophomore, B-3.

7 Analytic geometry, Bowser. Elective to classical students with English literature. Sophomore, C-3.

8 Differential calculus, Bowser. Junior scientific, A-2.

9 Integral calculus (optional), Bowser. Junior scientific, B-2.

10 Astronomy; lectures. Senior, C-5.

11 Solid analytics (optional). Junior, C-2.

12 Modern geometry (optional). Senior, A-2.

13 Determinants (optional). Senior, B-2.

Six lectures on the history of mathematics are delivered, as opportunity offers, during the course, commencing with the sophomore year.

#### GEOLOGY AND NATURAL HISTORY

1 Comparative physiology; Lectures illustrated with models, skeletons and preparations. Sophomore, A-2, B-2.

2 Descriptive zoology; Lectures. Junior scientific, A-2.

3 Physical geography; Lectures, with Geikie's Elementary lessons. Junior, C-2.

4 General geology; Lectures, with full illustrations, with charts, views and specimens. Senior, A-5.

5 Economic geology. Senior scientific, B-3. Optional with English literature.

6 Botany; Illustrated lectures. Senior, C-5.

#### CHEMISTRY

1 Inorganic chemistry: Experimental lectures. Junior, B-5.

2 Inorganic chemistry, continued; Organic chemistry; Lectures and recitations. Junior, C-5.

#### ANALYTIC CHEMISTRY

1 Analytic chemistry; Laboratory work. Senior scientific, A-5.

2 Analytic chemistry; Laboratory work. Senior scientific, B-5.

3 Technical quantitative analysis. Senior scientific, B-3.

For the courses in chemistry, open to special students, see page 660.

#### PHYSICS

1 Elementary mechanics, including the mechanics of liquids and gases. Sophomore, B-5.

2 Physics, sound and light. Sophomore, C-5.

3 Physics, heat and electricity. Junior, A-5.

4 Physics; Laboratory exercises. Junior scientific, B-3.  
Elective with German.

5 Physics; Laboratory exercises. Junior scientific, C-2.  
Elective with German.

#### MENTAL AND MORAL PHILOSOPHY

1 Psychology, text book, with lectures; Weekly theses by members of the class, followed by criticisms and discussions. Junior A-5.

2 Logic, pure and applied; text-book, with practical exercises. Junior C-5.

3 Ethics, theoretic and applied, Calderwood; Theses. Senior, B-5.

4 Natural theology; The philosophy, evidences and history of Christianity; Lectures, with recommended treatises. Senior, B-2, C-2.

#### POLITICAL SCIENCE

1 Political economy, Fawcett, with lectures on currency of moneys. Junior, A-5.

2 Natural and constitutional law, with lectures on political history. Senior, A-5.

3 International law, Woolsey, with lectures on diplomatic history. Senior, B-1, C-2.

#### HISTORY

1 English history of the 18th and 19th centuries, with synopses, essays and lectures. Freshman, B-2.

2 Ancient history, with synopses, topics and lectures. Freshman scientific, C-3.

3 Outlines of modern history, with synopses, essays and lectures. Sophomore, A-3.

#### GRADUATE COURSES

Each professor offers his courses subject to such arrangement of matters of detail as may be made between the candidate and himself by correspondence or personal interview. In certain subjects the courses are offered subject to the condition that a circle of not less than five persons be formed for the pursuit of the course selected.

For certain courses acquaintance with the German and French languages will be made by the professor a condition of admission.



## Language and literature

## LATIN

1 History of Roman literature, Cruttwell's. Early Latin, Professor F. D. Allen's Remnants of early Latin, as introductory to the vols. of the Corpus inscriptionum Latinarum. Selected Latin authors. Latin composition. Practical exercises and a study of Nägelsbach's Lat. Stilistik.

## GREEK

2 The Republic of Plato. Polybius. Strachan-Davidson, etc. The Politics of Aristotle. Thucydides.

3 Modern Greek.

## HEBREW

9 Hebrew language and literature. (a) Selections from the psalms, Job, and proverbs, with comparison of the versions and critical reading. (b) Biblical Aramaic. (c) Introduction to the Mishna.

## ENGLISH

27 *English literature*—The drama. Study of the historic development of the drama from the earliest period. Critical examination of selected masterpieces.

28 *English philology*—Introductory course. Study of the history and development of the old English dialects. Critical examination of selected examples of old English prose.

29 *English philology*—Advanced course. Study of old English poetry, with especial reference to the phonology and prosody.

30 *English philology*—Advanced course. The dialects and literature of the middle English period.

## GERMAN

4 *German literature*—The modern drama. Critical and comparative study of the classical period. Selected plays of Lessing, Schiller, and Goethe, with special reference to Scherer's History of German literature, vol. 2.

6 *Scientific and historical readings*—German prose composition and advanced grammar.

## FRENCH AND SPANISH

5, 6, 8 To be announced Oct., 1890.

**Mathematics and natural science**

## GEOLOGY AND NATURAL HISTORY

25 Geology. Text-book: Lyell's Principles.

## ANALYTIC CHEMISTRY

10 Chemical Laboratory.

For courses in chemistry open to special students, see pp. 660.

## PHYSICS

The courses in physics consist, in each instance, of (a) A general résumé of physics upon Daniell's Physics as a basis. (b) Study of some particular branch of physics, by reading, lectures and written exercises. (c) Laboratory work in the particular branch chosen. The courses offered, at present, are :

26 Mechanics.

11 Magnetism and electricity. For each, some acquaintance with calculus is desirable ; for 26 it is essential.

## MATHEMATICS

12 Mathematics in its higher applications to astronomy.

13 Higher pure mathematics.

**Philosophy and history**

## MENTAL AND MORAL PHILOSOPHY

14 History of ancient philosophy.

15 History of modern philosophy.

16 Contemporary ethics.

17 Philosophy of theism.

Instruction to resident graduates will be given in one or more of these courses. An examination may be appointed for non-resident students in each course. The seminary method of instruction is followed.

## POLITICAL SCIENCE

18 Sociology.

19 Philosophy of law.

## HISTORY

20 English history. 18th and 19th centuries.

## COMPARATIVE RELIGION

*(Lectureship)*

21 Comparative religion. The study of the Hindu-Buddhist, Mohammedan, Zoroastrian and Confucian systems in their relations to Christianity.

32 Comparative religion. Second year. Further study of the same systems; also the Assyrian, Egyptian, Norse and ancient American faiths.—Hindu and Greek philosophy compared. Modern Theosophy and “Esoteric Buddhism.”—The relation of heathen ethics to Christianity.

## HISTORY OF ART

31 History of art.

## SCHOOL OF CIVIL ENGINEERING

In addition to the special engineering studies, the courses in mathematics, mechanics and physics are thorough and complete, as well as those in modern languages, and in the regular English collegiate studies, to wit: chemistry, geology, botany, biology, history, logic, literature, intellectual and moral philosophy, political science, oratory and belles-lettres.

The study of subjects which form the common groundwork of all engineering specialties is supplemented by lectures which keep the students informed as to the latest developments in science. Standard books of reference are furnished, constantly referred to, and selections therefrom read by the students to the classes in elucidation of the subject taught.

The special final year of engineering studies in the university, preparatory to the degree of civil engineer, will give to the student opportunity to devote himself exclusively to subjects in the direct line of his profession.

Daily attendance at classes will not be required, but meeting with the professors, at intervals of two weeks or thereabouts, is preferred, although, if circumstances seem to justify, a non-resident course may be planned and followed.

## SCHOOL OF ANALYTIC CHEMISTRY

## QUALITATIVE ANALYSIS

The preliminary course in qualitative analysis is part of the general course required of candidates for the degree of bachelor of science or civil engineer. This includes qualitative inorganic

analysis by the blow-pipe, humid and spectrum methods; the separation of the principal bases, which serves as an introduction to quantitative analysis; the course concludes with an examination of the more important ores, poisons, adulterations, etc. Practical instruction in the use of the microscope is given. Text-book: Fresenius's Qualitative analysis. A full course of lectures is given in addition to the practical work.

#### ADVANCED COURSES IN QUANTITATIVE ANALYSIS

The advanced work in quantitative analysis includes: 1 Course in technical analysis; 2 Course in assaying; 3 Course in saccharimetry.

1 *Technical analysis* — This occupies two hours of three afternoons in each week of the first and second terms. It includes: (a) Volumetric analysis, acidimetry, alkalimetry; (b) Determination of iron in ores, slags, etc.; (c) The valuation of coals; (d) The analysis of furnace, fuel and waste gases by the methods of Hempel, Elliot and others; (e) Determination of the carbonic acid in limestones, etc.

2 *Assaying* — The course includes: (a) Assay of lead ores; (b) Assay of silver ores; (c) Assay of gold ores; (d) Electrolytic assay of copper ores, etc.

3 *Saccharimetry* — On account of the growing importance of the sugar industry of the country, owing to the successful application of the diffusion process for the extraction of saccharine matter from both southern cane and sorghum, this department has been enlarged with an especial view to practical work. Both color and shadow polariscopes are used.



## FRESHMAN CLASS

## FIRST YEAR

CLASSICAL COURSE		SCIENTIFIC COURSE		ENGINEERING COURSE	
Hours per Week	Hours per Week	Hours per Week	Hours per Week	Hours per Week	Hours per Week
		FIRST TERM			
5	Algebra	5	Algebra		Spheric trigonometry
5	Herodotus, selections, Greek prose composition	5	French — Langue'llier's method		German — Otto's method
5	Livy and Ovid, selections, Latin prose composition	5	Industrial drawing		Comparative physiology — Lectures illustrated with models, skeletons and preparations
		SECOND TERM			
5	Geometry	5	Geometry		Modern history
4	Odyssey, books 1, 5, 6 and 8, Greek prose composition	5	French — Langue'llier's method, French play or story, Translation from English into French		English literature — Selected authors of the 16th and 17th centuries
4	Horace's odes, Reading at sight of one of Cicero's orations, Latin prose composition	2	English history of the 18th and 19th centuries		Perspective, isometrical drawing
2	English history of 18th and 19th centuries	3	English literature — study of prose style and of representative prose authors		Descriptive geometry, shades and shadows
		THIRD TERM			
5	Plane trigonometry	5	Plane trigonometry		Conic sections
4	Xenophon's Memorabilia, Reading at sight in Plato's Apology and Crito, Greek prose composition	5	Translations from English into French of play or story, of French play into English		German — Otto's method and translations
4	Cicero's Cato major and Laelius, Latin prose composition, History of Roman literature	3	Ancient history		French — Translations, Contes contemporains
2	English literature — study of prose style and of representative prose authors	2	English literature — study of prose style and of representative prose authors		Science of rhetoric
					Comparative physiology as in first term
					Elementary mechanics — Lectures and recitations
					Land surveying and leveling, with use of instruments
					Conic sections
					German — translations
					French — translations, Contes contemporains
					Science of rhetoric
					Physics — Sound and light
					Higher surveying — Geodesy, railroad work, field operations

Optionals, that is, studies which may be taken outside the required hours, are not included in the above.

## SOPHOMORE CLASS

## SECOND YEAR

CLASSICAL COURSE		SCIENTIFIC COURSE		ENGINEERING COURSE	
Hours per Week		Hours per Week			
<b>CLASSICAL COURSE</b>					
3	Spheric trigonometry	<b>FIRST TERM</b>		Differential calculus	
3	Demosthenes' Oration on the crown; Lectures on Greek archeology illustrated with lantern views	3	Spheric trigonometry	Biology	
2	Horace's Satires and epistles; Reading at sight in Cicero's Letters	5	German — Otto's method	Philosophy	
3	Outlines of modern history	2	Outlines of modern history	Physics — Heat and electricity	
2	Review of the growth and development of English literature	2	Review of the growth and development of English literature	Engineering — Strength of materials	
2	Comparative physiology — Lectures illustrated with models, skeletons and preparations	2	Comparative physiology as in classical course		
<b>SCIENTIFIC COURSE</b>					
<b>FIRST TERM</b>					
3	Conic Sections, Elective with English	<b>SECOND TERM</b>		Integral calculus	
3	Euripides, Select tragedies	3	Conic sections	Physics — Laboratory exercises. Elective with German	
3	Tacitus, selections, reading at sight in the Agricola and the Dialogue, Terence, selections	2	German — Translations from English into German	Political economy	
2	Comparative physiology as in first term	2	French — Translations, Contes contemporains	Inorganic chemistry, Experimental lectures	
5	Mechanics	2	Comparative physiology as in first term	Engineering — Stability of structures and elements of design	
3	English — The essayists; General survey and study of selected examples; Bacon to Emerson. Elective with mathematics	5	Mechanics		
<b>ENGINEERING COURSE</b>					
<b>SECOND TERM</b>					
3	Conic sections, Elective with English	<b>THIRD TERM</b>		Applied mathematics, Sanitary engineering	
3	Isocrates' Panegyric oration, Lectures on Greek literature	3	Conic sections	Physics — Laboratory exercises. Elective with German	
2	Juvenal and Persius, selections	2	German — Translations from English into German	Logic — Pure and applied	
2	English — Science of rhetoric, Study of the science of effective expression	2	French — Translations, Contes contemporains	Organic chemistry — Experimental lectures.	
5	Physics — Heat, sound and light	2	English — Science of rhetoric, study of the science of effective expression	Physical geography, elective with German	
3	English — Poets, study of selected masterpieces Elective with mathematics	5	Physics — Heat, sound and light	German — Elective with physical laboratory and physical geography	

Optionals, that is, studies which may be taken outside the required hours, are not included in the above.

THIRD YEAR

JUNIOR CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE		ENGINEERING COURSE	
Hours per week		Hours per week			
		FIRST TERM			
5	German — Otto's method	2	Calculus		
5	Intellectual philosophy, Lectures and theses	2	Descriptive zoology, Lectures		
5	Physics — magnetism and electricity	5	Intellectual philosophy — Lectures, Weekly theses by members of the class, followed by criticisms and discussions		
		5	Physics — Magnetism and electricity		
		1	English — Edmund Burke, Life and works		
		SECOND TERM			
	German — Otto's method and translations from English into German	2	Calculus, Elective and German		
	Lucianus, book I and selections	3	Physics — Laboratory exercises, with German		
	Political economy	5	Political economy		
	Inorganic chemistry	5	Inorganic chemistry, Lectures		
		5	German — Play and novelette, Optional with calculus and physics		
		THIRD TERM			
3	German — Translations from English into German	2	Physics — Laboratory exercises, with German		
2	Sophocles, selections; Plutarch's De sera numinis vindicta	5	German — Play and novelette, Elective with physics and physical geography		
	Logic — Pure and applied	5	Logic — Pure and applied		
5	Organic chemistry	5	Organic chemistry		
		3	Physical geography, Elective with German		

Optionals, that is, studies which may be taken outside the required hours, are not included in the above.

## SPECIAL POST-COLLEGIATE YEAR

## SENIOR CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE		ENGINEERING COURSE
Hours per week		Hours per week		
FIRST TERM				
3	Catullus, selections. The elegiac poets	5	Natural and constitutional law. Elective with English literature	Prime movers considered in their various types of motors—wind, water, steam and electricity—special attention being given to the energy supplied to the motor and that ultimately obtained from it Practical astronomy in its relation to geodetic operations Graphical analysis General principles of law pertaining to locations, riparian rights and contracts Plans, specifications and estimates for a Truss, arch or girder bridge Water supply plant System of sewers Crib or pier Dwelling, factory or warehouse Highway, railroad and canal
2	Plato, select dialogues, Gorgias or Phædo	5	Analytic chemistry. Laboratory work	
5	French—Languetier's method. Elective with Greek and Latin	5	General geology. Lectures, with full illustrations, with charts, views and specimens	
5	Natural and constitutional law	5	English literature. Elective with analytic chemistry	
5	General geology. Lectures illustrated with charts, views and specimens			
SECOND TERM				
3	Critical study of the epistles of the New Testament. Lectures on Greek literature	4	Ethics—Theoretic and applied theses	
1	Cicero, Rhetorical or philosophical writings	2	Natural theology—Lectures, with recommended treatises	
4	French—Languetier's Method, with French play and translations from English into French. Elective with Greek and Latin	3	English literature--Old English, grammar and literature, Shakspeare, critical study. Elective with applied geology	
4	English literature—Old English, grammar and literature, Shakspeare—Critical study	3	Economic geology. Optional with English Literature	
4	Ethics—Theoretic and applied, theses	5	Analytic chemistry, Laboratory work.	
2	Natural theology—Lectures with recommended treatises	5	Elective with Spanish	
1	International law	1	Spanish—Elective with analytic chemistry International law	
THIRD TERM				
3	International law	3	International law	
5	Botany. Illustrated lectures	5	Botany. Illustrated lectures	
5	Astronomy, lectures	5	Astronomy, lectures	
2	Ethics	2	Ethics	
Students are appointed to deliver speeches in the chapel after prayers at least once each term. Essays in the class-room are required at stated periods throughout the year		Speeches and essays as in classical course		

Optionals, that is, studies that may be taken outside the required hours, are not included in the above.



## REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts is conferred on successful completion of the course in arts.

The degree of bachelor of science is conferred on completion of the course in science.

Bachelors of science who shall have pursued higher engineering studies for at least one year will, on giving evidence of their ability to design important structures and to make the requisite drawings and calculations, receive the degree of civil engineer. A thesis on some engineering subject, which must be approved by the faculty, will be required of each student before he can receive his degree.

The degrees of master of arts, master of science and doctor of philosophy are conferred on examination. In order to eligibility to any one of these degrees the candidate must have received the degree of bachelor from a college of good standing.

## BUILDINGS

Main building, three story, floor area about 33,000 sq. ft., 16 class rooms, 600 seats, value about \$200,000. Chapel, floor area 1,500 sq. ft., class rooms 7,500 sq. ft., science room 3,000 sq. ft., library rooms 4,000 sq. ft., laboratories 5,000 sq. ft., museum room 1,000 sq. ft., literary society rooms 1,000 sq. ft., officers' rooms 2,000 sq. ft., halls 4,000 sq. ft., miscellaneous 4,000 sq. ft., all contained in main building.

## ADDITIONAL INFORMATION

In May 1890 the university entered into a voluntary alliance with the Union Theological Seminary in the City of New York. The university will confer the degree of bachelor of divinity on such students of the seminary as may be recommended therefor by the directors and faculty of the seminary, and on like recommendation the degree of doctor of divinity on the alumni of the seminary. The university admits to its library and reading room, and without fee to certain lectures students of the seminary recommended by the seminary faculty. The seminary admits to its library for reference and to its courses of lectures certain specified classes of students of the university.

## COLGATE UNIVERSITY

*Hamilton*

CONSISTING OF

Department of Letters, Science and Philosophy	Hamilton Theological Seminary Colgate Academy
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## HISTORIC SKETCH

For list of date abbreviations see p. 254.

- |       |        |  |
|-------|--------|--|
| Month | Year   |  |
| 26 My | 1820   | The Hamilton Literary and Theological Institution established by Baptist Education Society of New York state.<br>First school established by baptists in America distinctively for ministerial education.  |
|       | 1831   | Course of study extended to six years.   |
|       | 1832   | Academic department established. Afterward known as Grammar school of Madison University, now Colgate Academy.   |
|       | 1833   | Course extended to eight years including academic, collegiate and theological departments. Arrangements made with the Columbian University in Washington by which B. A. and M. A. were conferred on young men who satisfactorily completed college course. |
|       | 1839   | Institution opened to young men not preparing for the ministry.  |
|       | 1840   | Trustees' application for college charter failed.  |
|       | 1843   | Second application for college charter unsuccessful.   |
| 26 Mr | 1846   | Madison University incorporated; subject to visitation of regents.<br>Corporation undertook college and preparatory work. Theological department remained in hands of Baptist Education Society.   |
|       | 1845-6 | Controversy over proposed removal to Rochester.  |
|       | 1853   | Grammar school of Madison University organized under care of university.   |

Month      Year

1875 Grammar school received name of Colgate Academy.  
Entered separate building.

1886 Hamilton Theological Seminary entered new building,  
Eaton Hall. Education Society still directs theo-  
logical work; salaries of professors in seminary  
provided for by the treasury of the university.

13 Mr 1890 Regents changed name to Colgate University.  
Supreme Court approved 22 Ap. Three depart-  
ments under one president.

## DEPARTMENT OF LETTERS, SCIENCE AND PHILOSOPHY

*Hamilton*

For historic sketch see foregoing.

### TRUSTEES

Elected

1861	President, James B. Colgate.....	New York
1883	Secretary, Rev. W. R. Clarke, D. D ...	Hamilton
1846	Alvah Pierce.....	"
1852	David A. Munro .....	Camillus
1855	Hon. Albert R. Fox.....	Sand Lake
1857	Samuel Colgate .....	New York
1864	P. B. Spear, D. D .....	Hamilton
1872	Albert S. Bickmore, Ph. D .....	New York
1872	Hosmer H. Keith.....	Sioux Falls, S. Dakota
1872	Rev. Edward Lathrop, D. D .....	New York
1873	John C. Hoyt .....	Utica
1875	Leonard W. Cronkite .....	Sandy Hill
1878	Edward Austen.....	Glencoe, Md.
1878	Isaac Johnson .....	Yonkers
1878	Russell Wheeler .....	Utica
1879	Thomson Kingsford .....	Oswego
1883	Isaac E. Gates, M. A. ....	Orange, N. J.
1883	Lewis E. Gurney .....	Troy
1883	Francis T. Pierce.....	Hamilton
1883	Daniel W. Skinner, M. A .....	"
1885	George A. Wolverton .....	Albany
1888	James C. Colgate, M. A .....	New York
1888	John Thorn. ....	Utica

## APPOINTED DURING YEAR

Elected

1890 George L. Stedman, M. A. . . . . Albany

## VACANCIES

Rev. Henry M. Sanders, Owatonna, Minn., resigned Je 1890

James W. Ford, Ph. D., New York, resigned Je 1890

## ADMINISTRATION

Figures in column at left give first year of service in Colgate.

1853 <sup>1</sup> President, Ebenezer Dodge, D. D., LL. D.

Educated at Brown University.

1864 Dean, N. Lloyd Andrews, Ph. D., LL. D.

Educated at Colgate.

1850 Secretary, Alexander M. Beebee, D. D.

Educated at Colgate.

Treasurer, William R. Rowlands.

1869 Registrar, James M. Taylor, M. A.

Educated at Colgate.

## INSTRUCTION

Figures in column at left give first year of service in Colgate and years spent in teaching.

1853 <sup>1</sup> Ebenezer Dodge, D. D., LL. D. President and Professor  
36 of Philosophy.

See also "Administration."

1842 Philetus B. Spear, D. D. Professor Emeritus of Hebrew  
40 and Latin.

Educated at Colgate.

1850 Alexander M. Beebee, D. D. Professor of Logic.

40 See also "Administration."

1851 Lucien M. Osborn, LL. D. Professor of the Physical  
43 Sciences.

Educated at Colgate.

1864 N. Lloyd Andrews, Ph. D., LL. D. Professor of the Greek  
26 Language and Literature.

See also "Administration."

<sup>1</sup> Died 5 Ja 1890



- 1869 James M. Taylor, M. A. Professor of Mathematics.  
21 See also "Administration."
- 1875 William Hale Maynard, D.D. Professor of Political  
15 Economy and Bleeker Professor of Moral Philosophy.  
Educated at Hamilton College.
- 1875 Sylvester Burnham, D. D. Professor of Biblical Literature.  
20 Educated at Bowdoin.
- 1883 Joseph F. McGregory, M. A. Professor of Chemistry and  
7 Mineralogy.  
Educated at Amherst.
- 1885 Benjamin S. Terry, M. A. Professor of Civil History and  
5 English.  
Educated at Colgate.
- 1888 William C. Eaton, Ph. D. Passed Assistant Engineer, U. S. N.  
2 Professor of Engineering.  
Educated at Colgate.
- 1888 Aaron H. Cole, M. A. Lecturer on Natural History.  
6 Educated at Colgate.
- 1887 William H. Crawshaw, M. A. Associate Professor of English  
3 Educated at Colgate.
- 1889 Frederick W. Colegrove, M. A. Professor of Latin.  
7 Educated at Colgate.
- 1890 Robert W. Moore, Ph. B. Instructor in Modern Languages.  
2 Educated at University of Michigan.

## VACANCIES

Albert G. Harkness, M. A. Resigned 5 S 1889.  
Ebenezer Dodge, D. D., LL. D., President. Died 5 Ja 1890.

## APPOINTED DURING YEAR

Robert W. Moore, Ph. B. Instructor in modern languages.  
Appointed 21 Ag 1890.

## PROMOTIONS

In both title and salary

William H. Crawshaw, M. A. Associate professor of English  
from Instructor in English.

## HONORARY DEGREES

M. A.—Rev. S. F. Calhoun .....	Orwell, Vt.
Rev. F. A. D. Launt .....	Auburn
Rev. P. V. Lindsay .....	Rochester
Ph. D.—George A. Williams .....	Saxton's River, Vt.
LL. D.—Andrew S. Draper .....	Albany

## COLLEGE APPOINTMENTS

Valedictory, Walter S. Lattimer .....	North Norwich
Salutatory, William Ford .....	Camden
Classical oration, William Maraguse ..	Central Square
Philosophical oration, Ulysses G. Weatherly .....	Owatonna, Minn.
Historical oration, Howland C. Merrill ..	Johnstown
Ethical oration, William J. Eyles .....	St. Paul, Minn.
Rhetorical oration, John W. Roberts ..	Marcy
Scientific oration, Hervey F. Mallory ..	Aurora, Ill.
English oration, William F. Fargo ....	Dell Rapids, S. Dakota

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

## KINGSFORD DECLAMATION PRIZES \$60

<i>Freshmen</i> —First, R. P. Gray
Second, W. B. Parsons
<i>Sophomores</i> —First, J. V. Sturges
Second, E. I. Case
<i>Juniors</i> —First, W. M. Bennett
Second, H. M. Burchard

## SOPHOMORE LATIN PRIZES

First, J. H. Baldwin .....	Value \$25
Second, B. H. Marenes .....	15

## ALLEN ESSAY PRIZES (SOPHOMORES)

First, A. G. Taylor .....	17
Second, G. S. Beckwith .....	13

## OSBORN MATHEMATICAL PRIZES (SOPHOMORES)

First, D. S. Carpenter .....	25
Second, A. C. McGregory .....	20
Third, S. L. Howe .....	15

## BALDWIN GREEK PRIZES (SOPHOMORES)

	Value
First, E. T. Stevens .....	\$18
Second, J. F. Baldwin .....	12

## LASHER ESSAY PRIZES (JUNIORS)

First, E. C. Harmon .....	17
Second, C. D. Case .....	13

## LAWRENCE CHEMICAL PRIZES

First, J. B. Skeley .....	25
Second, A. B. Potter .....	15

## CLASS OF '84 DEBATE PRIZES

First, E. E. Knapp .....	40
Second, W. S. Lattimer .....	20

## BUSHNELL HISTORICAL PRIZES

First, U. G. Weatherly .....	50
Second, W. Ford .....	25
Clark prize in oratory, F. A. Butler .....	50

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

The university provides four courses of study; classical, Greek-scientific, Latin-scientific, and English-scientific. These several courses each extend through four academic years, and embrace instruction in philosophy, history and political science, art, language and literature, and natural science.

## Department of Latin

1 *Historic* — Livy, books 21, 22. Selections from books 1, 2 are read at sight. Latin composition.

Special attention is given to etymology and syntax, and to the tracing of the development of the Roman state.

2 *Historic* — Tacitus, Agricola and selections from the Annals. The Germania is read at sight. Latin composition. The structure of the Latin sentence is studied, and the difference between the style of Tacitus and of Cicero carefully considered. Roman life and method of government in the time of the Empire are studied.

3 *Poetry* — Horace: Odes, Epodes, and *Ars poetica*. Selections from the minor poets, as Catullus, Tibullus, Propertius, etc. It is intended that while reading the Odes of Horace, to which the larger part of the term is devoted, the student learn to appreciate the poet.

In connection with the study of *Ars poetica*, there are lectures and class essays on Latin poetry.

4 *Satire* — Horace's Satires, Juvenal and Persius. Lectures and class essays on the manners and the customs of the Romans.

5 *Comedy* — Selected plays of Plautus and Terence. Attention is directed to early Latin, and to the development of the Latin language.

6 *Epistolary style* — Horace's epistles. Cicero's letters and Pliny's letters.

Topics suggested by the authors read are appointed for discussion in the class.

7 *Philosophical writings* — Cicero's Tusculan disputations, *De senectute*, and *De amicitia* are read at sight. Lectures on the civilization and literature of Rome, and on the sources of her philosophy, and the dominant features of her religion.

Courses 4 and 6, and 5 and 7, are read in alternate years by an elective division of the sophomore and junior classes.

### Department of Greek

The instruction in this department aims both at intellectual discipline and at literary culture. The translation of classic masterpieces is regarded as an efficient means of developing the power of thought and of expression, and as a valuable aid toward the acquisition of a correct and discriminating literary sense. The Greek literature is also treated as revealing the peculiar genius of an exceptionally gifted people, whose contributions to human civilization were most important. It is believed that, from both points of view, the study of Greek is well entitled to hold its place among "the Humanities." The language is not taught as in itself an end. Critical scholarship is esteemed as leading up to a just appreciation of the literature and the civilization, and as giving that insight into the real significance of ancient Greece to the world, which is in the highest sense instructive.



The Greek of the freshman and sophomore years is required of all students in the classical and the Greek-scientific courses. In the winter and spring terms of the junior year, and in the winter term of the senior year, Greek is offered as an elective to students in the classical and the Greek-scientific courses.

The work of the freshman year begins with the later books of the Iliad and selections from the lyric poets, or with the Odyssey and selections from Herodotus. As students in the Greek-scientific course take Greek in the fall term of sophomore year, these works are interchanged in alternate years. The winter term of the freshman year is given to the reading of Xenophon's Memorabilia or Plato's Apology and Crito. In the spring term of the freshman year, Demosthenes is taken up, either in select orations, or in the Oration on the crown. During the winter and spring terms, there is a weekly exercise in the history of Greece, and in the spring term essays are prepared by the class on different historical periods. Exercises in Greek prose composition accompany a part of the work in the freshman year.

In the winter term of the sophomore year, selected tragedies of Æschylus, Sophocles and Euripides are read as prescribed work, and prelections are given from other plays. The class prepare essays on topics related to the study of the Greek drama, and on the Greek literature in general. In the spring term of the sophomore year, Aristophanes is read.

During both terms one recitation a week is given to the Greek New Testament.

The elective Greek of the junior and senior years is offered chiefly as an introduction to Greek philosophy. In the winter term, either Plato's Phædo is read, or selections from his Republic. In the spring term (of the junior year only) Aristotle's Ethics is offered. Opportunity is also afforded, to any who may desire it, for some acquaintance with modern Greek.

### Department of English

Three different objects are sought in the department of English: *First*, proficiency in composition and in public address: *second*, a general acquaintance with the most prominent authors and their periods; *third*, a scientific knowledge of the origin and development of the English language.

1 *Oratory*, includes the formal study of elocution (Ross's Voice culture and elocution), with exercises in declamation continued through two years.

2 *Oratory* — Exercises in the composition and delivery of argumentative and oratorical themes throughout the junior year.

3 *Oratory* — During the senior year, an opportunity is offered for practice in public debate. At these debates the undergraduate classes are required to be present; the president of the university presides, and, at the close of each discussion, sums up the question on its own merits.

These courses in oratory extend over the four years of the college course.

4 *Rhetoric* — The fall term of the freshman year is given to the study of style. Genung's Practical rhetoric, part 1, is completed. Richard Grant White's Words and their uses is read, with class-room discussions of questions involved, together with copious exercises in the various elements of style, and with frequent reference to Trench On the study of words, The queen's English, etc.

5 *Rhetoric* — The winter and spring terms of the freshman year are given to the study of invention. In addition to the formal work in the text-book, the completion of part 2 of Genung's rhetoric, analysis of themes, presentation and criticism of plans, exercises in the various forms of composition, etc., are required of each member of the class.

6 *Study of English prose* — A critical study of representative prose authors of the present century, not including writers of fiction; class essays and discussions, with recitations from Minto's Manual of English prose.

7 *Study of English fiction* is on the same general plan as course 6.

The courses in English prose are designed to come in close relation to the courses in Rhetoric, and, with them, to constitute a continuous series.

8 *Anglo-Saxon* — (Origin of the English tongue.) Corson's Hand book of Anglo-Saxon; the Anglo-Saxon version of the Gospel of John entire; selections from King Alfred's Orosius; Aelfric's Homilies, and the Anglo-Saxon Chronicle.

9 *Anglo-Saxon* — (Origin of the English tongue.) A continuation of course 8. Comparative English grammar, on the basis of

March and Sweet; selections from Caedmon; Beowulf, entire; special study of transition English.

10 *The English of the 13th and 14th centuries* — The study of Layamon's Brut; the Ormulum; also Wiclif, Gower and Mandeville. Special attention is given to Chaucer, not only in the study of the language as represented in the Canterbury tales, but also to the place of Chaucer in English literature, as the first great representative of the modern period.

Courses 8, 9 and 10 are continuous, and designed to give the student such a knowledge of the origin and development of the English tongue as will enable him to carry on his studies independently of the instructor.

11 *Study of Shakspeare* — A critical study of the leading plays of Shakspeare on the seminary method, with special reference to the setting of plays, influence of times, growth of drama, place of Shakspeare in literature, etc.

12 *Study of Wordsworth* — With special reference to influence upon later English poetry. Reading and analysis of selections from Matthew Arnold's Wordsworth, with lectures and discussions.

13 *Study of Browning* — Corson's Introduction. General plan the same as that of the two preceding courses.

### Department of modern languages

#### GERMAN

1 Whitney's Grammar and reader; Wilhelmi's Einer muss heirathen and Benedix's Eigensinn; Practice in German conversation.

2 Schiller's Wilhelm Tell; Exercises in German composition.

3 Lessing's Minna von Barnhelm; Selections from Goethe's prose.

4 Schiller's Jungfrau von Orleans, and Goethe's Egmont; Selections and class essays on German literature.

5 Goethe's Faust; Lectures and class essays.

#### FRENCH

1 Otto's French grammar; Fénelon's Télémaque; Exercises in French composition.

2 Selected plays of Corneille, Molière or Racine; Exercises in French composition.

3 Selection from the French literature of the 18th century.



#### 4 Modern French plays.

In connection with courses 2, 3 and 4, the literature of the various periods will be studied in Marcillac's "Manuel d'histoire de la littérature Française."

Courses 3 and 4 are offered in alternate years.

### Department of mathematics

1 Solid and spherical geometry, and exercises in geometric invention, including theorems and problems. The aim is to develop the power of application of principles, as well as that of their rigid demonstration.

2 Algebra, embracing with others the following subjects: Solution of higher equations as quadratics; Functional notation; Theory of limits; Differentiation of algebraic, logarithmic, and exponential functions; Development of functions in series; Deduction and application of Maclaurin's Formula and binomial theorem; Convergence and summation of series; Theory of logarithms and deduction of the logarithmic and exponential series; Solution of exponential equations; Elements of the theory of equations, and solution of higher numerical equations; Decomposition of rational fractions; Permutations, combinations and probabilities.

3 Plane, analytic and spheric trigonometry, with applications, and plane surveying.

4 Analytic geometry, embracing the following subjects: Discussion and construction of equations; Production of equations of plane loci; Transformation of coordinates; Properties of the conic sections and some of the higher plane curves.

5 Calculus, including both the differential and the integral, with their various applications. The subjects pursued the first term are the differentiation of functions, with applications; Direct integration, with applications to geometry and mechanics; Successive differentiation and integration, with applications to mechanics; Evaluation of functions assuming indeterminate forms; Development of functions in series; Maxima and minima; Tangents, normals and asymptotes to plane curves.

The work of the second term embraces the more advanced portions of both the Differential and Integral Calculus.

7 In higher mathematics, the student may elect any one of the following subjects: An advance course in analytic geometry or the calculus; Elements of quaternions; Determinants.



### Department of chemistry and mineralogy

The courses of study in this department begin in the sophomore year, and may be continued, as required or elective studies, throughout the remainder of the collegiate course. For one term, and a portion of another, the work will be in the class room, and conducted by means of a text-book, with experimental lectures. The remainder of the work is done in the laboratory.

The following courses of study are offered :

1 General chemistry for beginners, embracing the study of the non-metallic elements. There are daily recitations from Harris' Lecture notes on general chemistry, with accompanying lectures and experiments.

This course, or a full equivalent, is required for entrance to the Latin-scientific course and English-scientific course, and, during the spring term of the sophomore year, of those pursuing the classical course or the Greek-scientific course.

2 A supplementary course in general chemistry, introductory to the course in qualitative analysis. Text-book: Richter's Inorganic chemistry. Lectures will be given on the principal theories involved, on metallurgical processes, and upon the elements of crystallography.

3 Qualitative analysis, including the determination of all simple inorganic substances. Text-book: Harris' Manual of qualitative analysis, Parts 1 and 2.

4 Qualitative analysis, continuing course 3, and including the various methods employed for separating the metals. Harris' Manual (part 3) is used.

5 Elementary mineralogy, open only to those who have had a course in qualitative analysis, is studied principally in its relations to chemistry. About one-half the time is occupied with crystallography, and the remainder in the study of the physical and chemical properties of minerals, and their determination. A short course of lectures upon assaying is given in connection with this work.

6 Quantitative analysis occupies two terms. During the first, the student makes the principal simple determinations; during the second, the determination of complex compounds and minerals is made. Both gravimetric and volumetric methods are employed. Harris' Quantitative analysis will be used.

7 Following the course in quantitative analysis, some of the simpler courses in technical chemical analysis are offered. Such are the analysis of dairy products, water, urine, etc.

8 Organic chemistry is offered as an elective to those pursuing the English-scientific course during the senior year.

Post-graduate courses, consisting of those here offered or of others more advanced, may be pursued by those who wish.

### Department of natural history

*Zoology* — This subject is offered as an elective in the fall term of the junior year. The characteristics of the sub-kingdoms, classes and orders are studied in type specimens.

*Geology* — The subject is offered to the juniors as an elective in the spring term. Field work, with the discussion of its results in the laboratory, will be an important feature in the course.

*Botany* — This course is offered as an elective in the spring term of the senior year. Field and laboratory work, together with the study of the microscopical preparations, will occupy most of the time.

### Physiology

In the fall term of the junior year physiology is offered as an elective. Text-book: Martin's. In the winter term the subject is continued, with lectures, and the use of the microscope, models and charts. The work of this term is also elective.

### Applied mathematics and physical sciences

*Mechanics* — Instruction in this subject is given during the winter term of the junior year. Text-book: Snell's.

*Physics* — In the spring term of the junior year, the subjects of light, heat, electricity, etc., are taken up. There are frequent lectures, illustrated by experiments.

*Astronomy* — This subject is an elective study of the winter and spring terms of the senior year, except to students of the English-scientific course, for whom it is required. Text-book: Young's. In the spring term, in connection with the consideration of the planets, fixed stars, etc., lectures are given, and illustrations by the oxyhydrogen light.

### Department of engineering

*Descriptive geometry* — Daily recitations, with a fair proportion of original work, are required in this subject during the fall term of the junior year, in the English-scientific course. The subject

is elective in all the other courses. Text-book: Church's Descriptive geometry.

*Mechanical drawing and strength of materials* — Instruction is given to the junior class during the winter term. Required in the English-scientific and elective in all other courses. Text-book: Anderson's Strength of materials. In mechanical drawing, personal instruction is given.

*Metallurgy and the steam engine* — These subjects are given in alternate years, to the junior class during the spring term, the object being to present opportunity to those students desiring to pursue both studies to take up the alternate subject during the senior year. Required in the English and Latin-scientific courses, and elective in all others. Text-books: Holmes' Steam engine and Huntington's Bloxom on metals.

*Applied mechanics* — This subject is given to the senior class during the fall term, as an elective. Text-book: Cotterill.

## Department of history and political science

### HISTORY

1 An introduction to modern history, is mainly occupied with an exposition of the philosophy of history, the consideration of the original elements of modern civilization, and a review of those parts of oriental and classical history which bear most directly upon the progress of modern civilization.

2 The period of transition is a study of the six centuries which intervened between the beginning of the barbaric migrations and the treaty of Verdun, noting especially the origin and progress of those great movements, by which classical Europe passed into feudal Europe.

3 The feudal period treats of the political and constitutional history of Europe from the treaty of Verdun to the election of Rudolph of Hapsburg. The aim of this course is to lead the student to the study of those centrifugal forces which effected the dissolution of the Empire of Charlemagne, and resulted in the dispersion of the feudal system.

4 The period of renaissance and reformation is a study of the great political and social movements of Europe from the rise of the national monarchy in France to the treaty of Westphalia. The decline of the feudal system and of the imperial idea, the growth of the national monarchy, the attempts made by



the several nations of Europe at representative government, the attempts at religious and political reform, with the varying results attained, are studied as great continental movements, confined to no one state in particular, but marking in each state the general progress of European civilization.

5 The modern period is studied from the American and French revolutions as a center, marking the close of the reign of powers and forces in Europe, and the beginning of the reign of ideas.

6 English historic seminary. During the senior year, a seminary for advanced students will be organized for the study of special questions connected with the growth of the English constitution. Stubb's Select charters will be used as a basis of the work of the class.

7 American historic seminary. The design of course 7 is to note the growth and significance of American institutions; the debt of America to the mistakes and failures of the old world as well as its successes; and, in general, to study the fundamental principles of the national government in their historic relations.

#### ROMAN LAW

8 Moray's Outlines. An elementary course, covering Roman Private law, and designed to give the historical student some familiarity with fundamental legal notions.

#### INTERNATIONAL LAW

9 Daily recitations from Woolsey's Introduction to the study of international law, with discussions and occasional lectures.

### Department of political economy

#### POLITICAL ECONOMY

Daily recitations from Walker's Political economy, supplemented by lectures and discussions.

#### CONTEMPORARY SOCIALISM

The views of the most prominent living socialists are brought before the class by means of lectures, discussions and criticisms.

#### Art

In the senior year instruction is given in the history of architecture and of sculpture. Special attention is given to the origin and development of Greek architecture. Gothic and renaissance



architecture are likewise treated. An attempt is made to give some accurate acquaintance with the masterpieces of ancient sculpture and to show the relation between classic and medieval art.

### Logic

It is the object of this department to give the student a thorough knowledge of the subject, embracing both formal and applied logic. The nature, sphere limitations and applications of principles are defined and illustrated.

### Psychology

The study of the human mind is taken up in the fall term of the senior year, and is required in all the courses. Attention is given to the history of philosophic thought, beginning with the Greek thinkers. The class prepare essays on the principal modern philosophers, and their distinctive theories are further treated in oral lectures and discussions.

### Evidences of Christianity

Lectures are given on the historical character of the religion of Christ; on Christianity as a supernatural fact; as a divine life; as a new revelation of truth and duty; as a divine kingdom; as a fulfillment of ethnic aspirations and Jewish hopes; and as a world power. These lectures are accompanied with an examination of the various skeptical tendencies of modern thought.

### Christian ethics

Lectures are given on theoretic ethics. The course embraces the history of ethical opinions, the relation of morals to religion, the criticism of the current theories—the evolutionary, the utilitarian, the independent, and the intuitive conceptions of morals; and the fuller exposition of the ethics of Christianity.

These lectures will also treat of practical ethics. This course will include both spontaneous and reflective moral activities of the soul, and will embrace our duties to God—to ourselves—to the family—to society and to the church.

There are also special lectures on liberty of thought, its nature and its value; on the laws of intellectual growth; on the formation of opinions; on personal character as a factor in public life; on the choice of a vocation in life; and on manners.

**Department of Biblical Literature**

In this department, the books of the Bible are made the subjects of literary study and criticism. The Bible is considered simply as a collection of books, forming a unique national literature, which was a natural product of a peculiar national life, and was intended by its authors to be a help towards the securing of a national destiny in which they believed and for which they hoped.

## FRESHMAN CLASS

CLASSICAL COURSE		GREEK-SCIENTIFIC COURSE		LATIN SCIENTIFIC COURSE		ENGLISH-SCIENTIFIC COURSE	
Days per week		Days per week		Days per week		Days per week	
FALL TERM							
3	Livy	5	Mathematics	5	Mathematics	5	Mathematics
5	Iliad, later books and Lyric poets, or Odyssey and Herodotus, selections	5	Greek Physiology	3	Latin	5	German
		3	Rhetoric	4	German	3	Physiology
5	Solid geometry	2	Rhetoric	2	Rhetoric	2	Rhetoric
2	Rhetoric	2	Oratory	2	Oratory	2	Oratory
2	Oratory						
WINTER TERM							
3	Livy, Tacitus	5	Mathematics	5	Mathematics	5	Mathematics
4	Xenophon's memorabilia, or Plato's Apology and Crito	5	Greek Physiology	3	Latin	4	German
1	Greek New Testament	3	Rhetoric	4	German	3	Physiology
5	Higher algebra	2	Oratory	2	Rhetoric	2	Rhetoric
2	Rhetoric	2		2	Oratory	2	Oratory
2	Oratory						
SPRING TERM							
3	Tacitus	5	Mathematics	5	Mathematics	5	Mathematics
4	Demosthenes	3	Greek	3	Latin	4	German
1	Greek New Testament	5	Geometric invention, Higher algebra	4	German	3	Geometric invention, Higher algebra
5	Trigonometry and surveying	3	Rhetoric	2	Rhetoric	3	Rhetoric
2	Rhetoric	2	Oratory	2	Oratory	2	Rhetoric
2	Oratory	2				2	Oratory

## SOPHOMORE CLASS

CLASSICAL COURSE		GREEK-SCIENTIFIC COURSE	LATIN-SCIENTIFIC COURSE		ENGLISH-SCIENTIFIC COURSE
Days per Week		Days per Week	Days per Week	Days per Week	Days per Week
FALL TERM					
5	Horace's Odes, Epodes, Ars poetica, Minor poets, selections	5	Mathematics	5	Mathematics
5	Spherical trigonometry, analytic geometry	5	Greek	5	Chemistry
3	Otto's French grammar, Fénelon's Télémaque	3	French	3	French
3	English—Study of English prose	3	English	3	English
1	Oratory	1	Oratory	1	Oratory
WINTER TERM					
5	REQUIRED	5	Mathematics	5	Mathematics
3	Greek tragedies	5	Latin	5	Chemistry
3	French—Corneille, Molière or Racine	3	French	3	French
3	English—Study of English fiction	3	English	3	English
1	Oratory	1	Oratory	1	Oratory
5	ELECTIVES				
5	Satires of Horace, Juvenal and Persius				
5	Calculus				
SPRING TERM					
5	REQUIRED	5	Mathematics	5	Mathematics
1	Chemistry	5	Latin	5	Chemistry
1	English—Study of English fiction	5	Botany	5	Botany
	Oratory	1	English	1	English
	ELECTIVES	1	Oratory	1	Oratory
5	Aristophanes or Lucian				
5	Plautus and Terence				
5	Calculus				



## JUNIOR CLASS

CLASSICAL COURSE		GREEK-SCIENTIFIC COURSE		LATIN-SCIENTIFIC COURSE		ENGLISH-SCIENTIFIC COURSE	
Days per week		Days per week		Days per week		Days per week	
FALL TERM							
5	REQUIRED	5	REQUIRED	5	REQUIRED	5	REQUIRED
1	Logic, Formal and applied	5	Logic, Chemistry	1	Chemistry	2	Engineering
	Oratory	5	Oratory		Oratory	1	History
5	ELECTIVES	1	ELECTIVES	5	ELECTIVES		Oratory
5	Engineering—Descriptive geometry	5	Engineering	5	Logic	5	Chemistry
2	Modern history	5	German	5	Engineering		Logic
5	Chemistry—Metallic elements, qualitative analysis	2	History	2	Zoology	5	Zoology
5	German—Grammar and reader	5	Zoology	3	Physiology	5	English
3	Physiology	3	English	3	English	3	
6	Zoology						
3	Anglo-Saxon						
WINTER TERM							
5	REQUIRED	5	REQUIRED	5	REQUIRED	5	REQUIRED
1	Physics	5	Physics	5	Physics	5	Physics
	Oratory	5	Chemistry or engineering	5	Chemistry or engineering	5	Engineering
5	ELECTIVES	1	ELECTIVES	1	ELECTIVES	2	History
5	Horace's Epistles, Letters of Cicero and Pliny	5	Latin	5	Latin	1	Oratory
3	Plato's Phaedo or Republic	3	Mathematics	3	Mathematics		ELECTIVES
3	Higher mathematics	2	History	2	History	3	Mathematics
5	Engineering—Mechanical drawing and strength of materials	3	Physiology	3	Physiology	5	Chemistry
2	Medieval history	3	English	3	English	3	English
5	Chemistry—Qualitative analysis						
4	German—Schiller's Wilhelm Tell						
3	Physiology						
3	Anglo-Saxon						

## JUNIOR CLASS — (Continued)

CLASSICAL COURSE		GREEK-SCIENTIFIC COURSE		LATIN-SCIENTIFIC COURSE		ENGLISH-SCIENTIFIC COURSE	
Days per Week		Days per Week		Days per Week		Days per Week	
SPRING TERM							
5	Physics	5	Physics	5	Physics	5	Physics
1	Oratory	5	Geology	5	Engineering	5	Engineering
		1	Oratory	1	Oratory	1	Oratory
5	Cicero's Tusculan disputations	3	REQUIRED	5	REQUIRED	5	REQUIRED
5	Aristotle's Ethics or Plutarch's	5	ELECTIVES	5	ELECTIVES	5	ELECTIVES
3	De sera numinis vindicta	3	Greek	5	Chemistry	5	Chemistry
5	Engineering — Metallurgy and	5	Chemistry	5	Latin	2	History
	steam engine	4	German	5	Geology	3	French
3	History — The feudal period	2	History	2	History	5	Geology
5	Mineralogy	5	Engineering	3	French	5	Roman or international law
4	Lessing's Minna von Barnhelm,	3	French	3	Roman or international law	3	English
	Goethe's prose selections	3	Roman law	3	English		
3	French — Literature of the 18th	3	English				
	century						
5	Geology						
3	Roman or international law						
3	English of the 13th and 14th						
3	centuries						

## SENIOR CLASS

CLASSICAL COURSE	GREEK-SCIENTIFIC COURSE	LATIN-SCIENTIFIC COURSE	ENGLISH-SCIENTIFIC COURSE
Days per Week	Days per Week	Days per Week	Days per Week
FALL TERM			
5 1 2 3 5 5 3 1 1 1	REQUIRED Psychology, with history of philosophy Oratory  ELECTIVES Medieval history English historic seminary Chemistry - Quantitative analysis Engineering - Applied mechanics Study of Shakspeare Art - Lectures on architecture and sculpture Biblical literature Elective studies of junior year	5 1           REQUIRED Psychology Oratory  ELECTIVES Same as in classical course	5 1           REQUIRED Psychology Oratory  ELECTIVES Same as in classical course
WINTER TERM			
3 2 1 3 5 2 3 5 4 3 1 1	REQUIRED Political economy Evidences of Christianity Oratory  ELECTIVES Plato's Republic, or Phædo Astronomy Modern history American historic seminary Chemistry - Quantitative analysis Schiller's Jungfran von Orleans, Goethe's Egmont Study of Wordsworth Art - Lectures on architecture and sculpture Biblical literature Elective studies of junior year	3 2 1           REQUIRED Political economy Evidences of Christianity Oratory  ELECTIVES Same as in classical course, omitting Greek	3 2 5 1        REQUIRED Political economy Evidences of Christianity Astronomy Oratory  ELECTIVES Same as in classical course, omitting Greek and astronomy

## SENIOR CLASS — (Continued)

CLASSICAL COURSE	Days per Week	GREEK-SCIENTIFIC COURSE	Days per Week	SPRING TERM		LATIN-SCIENTIFIC COURSE	Days per Week	ENGLISH-SCIENTIFIC COURSE
				REQUIRED	REQUIRED			
3 Political economy	3	3 Political economy	3	3 Political economy	3	3 Political economy	3	3 Political economy
2 Christian ethics	2	2 Christian ethics	2	2 Christian ethics	2	2 Christian ethics	2	2 Christian ethics
1 Oratory	1	1 Oratory	1	1 Oratory	1	1 Oratory	4	4 Astronomy
4 Astronomy	4	ELECTIVES		ELECTIVES		ELECTIVES	1	ELECTIVES
1 Contemporary socialism	1	Same as in classical course		Same as in classical course		Same as in classical course		Same as in classical course,
5 Chemistry — Special analysis	5							omitting astronomy
2 Modern history	2							
3 International or Roman law	3							
4 Goethe's Faust	4							
3 French — Modern plays	3							
5 Botany	5							
3 Study of Browning	3							
1 Art — Lectures on architecture	1							
and sculpture								
1 Biblical literature	1							
1 Elective studies of the junior year	1							

<sup>1</sup> The elective studies of the junior year may be taken when the hours of recitation do not conflict.



## REQUIREMENTS FOR GRADUATION

Students who successfully complete the classical course are candidates for the degree of bachelor of arts; those who complete any one of the scientific courses, for the degree of bachelor of science.

Graduates of the classical course, of at least three years' standing, and who have spent at least two years in professional or other literary studies, may, upon recommendation of the faculty, receive the degree of master of arts.

Graduates of any of the scientific courses, of at least three years' standing, and who have spent at least two years in scientific studies, may, upon recommendation of the faculty, receive the degree of master of science.

No degree, however, can be conferred unless the applicant shall have sustained a good moral character, settled all college bills, and returned all books to the library.

## BUILDINGS

Dormitory west college, four story stone, built 1827, floor area 24,000 sq. ft., four class rooms, 160 seats, value \$12,500. Dormitory east college, four story stone, built 1834, floor area 22,400 sq. ft., value \$12,000. Alumni hall including chapel, three story stone, built 1861, floor area 23,433 sq. ft., seven class rooms, 280 seats, value \$30,000. Five science rooms, floor area 2,490 sq. ft. Library, three story stone, built 1890, floor area 24,500 sq. ft., value \$145,000. Chemical laboratory, two story stone, built 1884, floor area 6,300 sq. ft. Two class rooms, 80 seats, value \$25,000. Museum room, floor area 1,200 sq. ft. President's house, two story wood, value \$12,000.

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## ST JOHN'S COLLEGE

*Fordham*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

10 Ap 1846 Incorporated by legislature with usual university powers; subject to visitation of regents.  
Conducted by Jesuit fathers.

## TRUSTEES

Elected

1888	President, Rev. John Scully, S. J. . . .	Fordham
1882	Secretary, Rev. P. F. Dealy, S. J. . . .	"
1876	Rev. W. Moylan, S. J. . . . . . . . . . .	30 W. 16 st.
1880	Rev. P. A. Halpin, S. J. . . . . . . . . .	Fordham
1885	Very Rev. Thomas J. Campbell, S. J. . .	30 W. 16 st.
1886	Rev. C. O'Connor, S. J. . . . . . . . . .	30 W. 16 st.
1889	Rev. E. Doucet, S. J. . . . . . . . . . .	Fordham
1889	Rev. Joseph Loyzance, S. J. . . . . . . .	South Norwalk, Ct

## APPOINTED DURING YEAR

1889	Rev. Joseph Prachensky, S. J. . . . . .	Fordham
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## VACANCIES

Rev. Michael Flynn, S. J., Georgetown Coll., D. C., resigned  
23 S 1889

Rev. George Quin, S. J., St John's Coll., D. C., resigned  
23 S 1889

## ADMINISTRATION

Figures in column at left give first year of service in St John's College.

1888 President, Rev. John Scully, S. J.

Educated at private schools.

1888 Vice-President, Rev. Patrick A. Halpin, S. J. Prefect of  
Studies and chief Disciplinarian

Educated at St Francis Xavier's College.

Vice-President's assistant, Francis J. Lamb, S. J.

1889 Secretary, Rev. Patrick F. Dealy.

Educated at St John's.

Treasurer, Rev. H. Kavanagh, S. J.

Assistant Treasurer, John Doudle, S. J.

Chaplain, Rev. D. McGoldrick, S. J.

First Assistant Disciplinarian, John B. Pittar, S. J.

1889 Attending Physician, T. Joseph Dunn, M. A., M. D.

Educated at St John's.

## INSTRUCTION

Figures in column at left give first year of service in St John's College, and years spent in teaching.

- 1888 Rev. John Scully, S. J., President.  
5 See also "Administration."
- 1889 Rev. Patrick A. Halpin, S. J., Vice-President.  
8 See also "Administration."
- 1889 Rev. Timothy O'Leary, S. J., Professor of Mental and Moral  
5 Philosophy and Evidences of Religion.  
Educated at Georgetown College, D. C.
- 1889 Rev. Joseph I. Ziegler, S. J., Professor of Analytical and  
6 General Chemistry.  
Educated at Loyola College, Md.
- 1879 Rev. Louis Jouin, S. J., Professor of Philosophy in Post-  
Graduate Course.  
Educated at Berlin.
- 1889 Rev. Joseph Zwinge, S. J., Professor of German.  
Educated at St John's.
- 1889 Rev. David J. Hogan, M. A., Professor of Higher Mathe-  
7 matics and Astronomy.  
Educated at St John's.
- 1889 Owen A. Hill, S. J. Professor of Mental and Moral Philoso-  
6 phy, Surveying and Algebra. Moderator of St John's  
House of Representatives.  
Educated at Holy Cross College, Worcester, Mass.
- 1889 Rev. Lawrence J. Kavanagh, S. J. Professor of Rhetoric.  
6 Educated at St Bonaventure's College, Newfoundland.
- 1888 John A. Moore, S. J. Professor of Belles-Lettres.  
6 Educated at Boston College.
- 1889 Joseph H. Smith, S. J. Teacher of Second Grammar,  
4 French and Arithmetic. Moderator of the Dramatic  
Society.  
Educated at St Francis Xavier's College.
- 1888 James J. Walsh, S. J. Teacher of Third Grammar and  
Geometry. Moderator of St John's Senate.  
Educated at St John's.

1889 Ambrose J. O'Connell, S. J. Teacher of Special Latin  
4 Class.

Educated at St Francis Xavier's College.

1889 Rev. William J. Quigley, S. J. Professor of Algebra.

4 Educated at St Francis Xavier's College.

1889 Thomas O'Sullivan. Teacher of First English Grammar  
7 and Special English.

1889 Daniel E. Kiernan. Teacher of Second English Grammar.

Educated at St Francis Xavier's College.

1889 Vincent P. Delany. Teacher of Rudiments.

1885 Herbert G. Squiers, Second Lieutenant, Seventh Regiment  
?5 Cavalry, U. S. Army. Professor of Military Science and  
Tactics.

Educated at West Point.

1881 Adolf Petersen. Professor of Music and German.

Educated in Germany.

1889 William Christup. Assistant Professor of Music.

1889 Francis McLean. Assistant Professor of Music.

1889 Louis Weber. Assistant Professor of Music.

1886 Louis Francis Rondel. Professor of Painting and Drawing.

1889 P. Joseph Casey. Professor of Stenography and Book-  
keeping.

#### ASSISTANT DISCIPLINARIANS

1889 Rev. William J. Quigley, S. J. First Assistant.

1889 Owen A. Hill, S. J.

4 Educated at St Francis Xavier's College.

1889 Francis J. Lamb, S. J. Moderator of Historical Society.

Educated at Rome, Italy.

1889 Ambrose J. O'Connell, S. J.

Educated at St Francis Xavier's.

1889 Joseph P. Carney, S. J.

4 Educated at St Francis Xavier's.

1889 Philip M. Finegan, S. J.

4 Educated at St Francis Xavier's.

1889 Thomas Carmody.

6 Educated at St John's.

1889 James A. Dunn.



## VACANCIES

- 2 Rev. George Quin, S. J. Vice-President.  
 1889 James J. Keane. Resigned 26 Je 1890.  
 1889 John C. McNeilly. Resigned 26 Je 1890.  
 6  
 1889 T. Gaffney Taaffe. Resigned 26 Je 1890.  
 8  
 1888 E. Howard Brown, S. J. Teacher of first Latin grammar,  
 German and algebra. Resigned 30 Jl 1890.  
 1888 John Coyle, S. J. Professor of physics and electrical  
 6 engineering. Resigned 30 Jl 1890.  
 1889 Philip M. Finegan, S. J. Professor of belles-lettres and  
 4 arithmetic. Resigned 31 Jl 1890.  
 1888 John S. Hollohan, S. J. Professor of classics and arithmetic,  
 1 Librarian of students' library. Resigned 31 Jl 1890.  
 1886 Rev William Kevill, S. J. Professor of Rhetoric and French,  
 6 President of St John's House of Representatives. Resigned  
 31 Jl 1890.  
 2 Rev. James Fagan, S. J.  
 ?14 Rev. Michael Flynn, S. J.  
 ?15 Rev. Thomas Freeman, S. J.  
 4 James Kelly, S. J.  
 ?20 Rev. Joseph Loyzance, S. J.  
 1 Rev. A. Maes, S. J.

## APPOINTED DURING YEAR

Rev. Patrick A. Halpin, S. J. Vice-president. Elected 23 S  
 1889.

Rev. Patrick F. Dealy, S. J. Treasurer and chaplain. Elected  
 23 S 1889.

Rev. Timothy O'Leary, S. J. Professor of mental and moral  
 philosophy and evidences of religion. Elected 23 S 1889.

Rev. Joseph I. Ziegler, S. J. Professor of analytical and general  
 chemistry. Elected 23 S 1889.

Rev. Joseph Zwinge, S. J. Professor of German. Elected 23 S  
 1889.

Rev. David J. Hogan, M. A. Professor of higher mathematics  
 and astronomy. Elected 14 D 1889.

Owen A. Hill, S. J. Professor of mental and moral philosophy,  
 surveying, algebra. Elected 23 S 1889.

Rev. Lawrence J. Kavanagh, S. J. Professor of rhetoric. Elected 23 S 1889.

Joseph H. Smith, S. J. Teacher of second grammar, French, arithmetic. Elected 23 S 1889.

Ambrose J. O'Connell, S. J. Teacher of special Latin class. Elected 23 S 1889.

Rev. William J. Quigley, S. J. Professor of algebra. Elected 23 S 1889.

Thomas O'Sullivan, Teacher of first English grammar, special English. Appointed 2 S 1889.

Daniel E. Kiernan, Teacher of second English grammar. Appointed 2 S 1889.

Vincent P. Delany, Teacher of rudiments. Appointed 2 S 1889.

William Christup, Francis McLean, Louis Weber, Assistant professors of music. Appointed 2 S 1889.

P. Joseph Casey, Professor of stenography and book-keeping. Appointed 4 S 1889.

T. Joseph Dunn, M. A., M. D. Attending physician. Appointed 1 N 1889.

Francis J. Lamb, S. J. Moderator of Historical society. Appointed 7 O 1889.

Joseph P. Carney, S. J. Assistant disciplinarian. Appointed O 1889.

Thomas Carmody, Assistant disciplinarian. Appointed 3 S 1889.

T. Gaffney Taaffe, Assistant disciplinarian. Appointed 3 S 1889.

John C. McNeilly, Assistant disciplinarian. Appointed 3 S 1889.

James J. Keane, Assistant disciplinarian. Appointed 3 S 1889.

James A. Dunn, Assistant disciplinarian. Appointed 3 S 1889.

### HONORARY DEGREES

LL. D.—Hon. William E. Robinson . . . . . Brooklyn

### COLLEGE APPOINTMENTS

Valedictory, Kenyon J. Fortescue . . . . .	New York
Salutatory, John A. Ryan . . . . .	New Rochelle
English oration, John B. Whelan . . . . .	Montreal, Can.
Classical oration, Thomas G. Taaffe . . . . .	New York
Scientific oration, James J. Keane . . . . .	Kingston
Philosophical oration, John C. McNeilly . . . . .	Canandaigua

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Hughes medal for best examination in mental philosophy, James J. Keane, Kingston .....	\$50
Purse for best essay in English literature, Francis J. McLean, Brooklyn.....	50
Gold military medal for best essay, Paul R. Conniff, Oneida	25
Good conduct, David Arellano, Nicaragua, C. A.....	25

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

CLASSICAL COURSE	COMMERCIAL COURSE
<p><b>CLASSICS (FRESHMAN CLASS)</b></p> <p><i>Latin</i> — Grammar, syntax reviewed, idioms, prosody; Exercises in prose and verse; Sallust, Virgil, Cicero in Catilinam</p> <p><i>Greek</i> — Grammar (completed), prosody, Xenophon's <i>Cyropædia</i>, Homer's <i>Iliad</i>, Herodotus</p> <p><i>English</i> — Prosody, composition</p> <p><i>Elocution</i> — One hour a week</p> <p><i>History</i> — Ancient</p> <p><i>Mathematics</i> — Algebra and geometry</p> <p><i>Religious instruction</i> — Catechism</p>	<p><b>FIRST GRAMMAR CLASS</b></p> <p><i>English</i> — Grammar, exercises; Sixth reader and grammar school</p> <p><i>History</i> — Ancient; Fredet</p> <p><i>Geography</i> — Appleton's</p> <p><i>Arithmetic</i> — Ray's</p> <p><i>Book-keeping</i> — Bryant and Stratton's Counting house, practical business</p> <p><i>Penmanship</i></p> <p><i>Religious instruction</i> — Catechism</p>
<p><b>BELLES-LETRES (SOPHOMORE CLASS)</b></p> <p><i>Latin</i> — Prosody and principles of Latin style; Prose and verse composition, Livy, Horace, Virgil, Cicero</p> <p><i>Greek</i> — Principles of Greek style, prose and verse composition, Plato's <i>Apologia</i>, Demosthenes' <i>Olynthiæcs</i>, Homer's <i>Iliad</i>, Sophocles' <i>Oedipus Rex</i></p> <p><i>English</i> — Precepts of literature. Lectures on style and poetry. Analysis of selections from the best authors. Critical study of Shakspeare's <i>Macbeth</i>, <i>Epistolary</i>, descriptive, and narrative composition, essays, poems, etc. History of English literature</p> <p><i>Elocution</i> — One hour a week</p> <p><i>History</i> — Modern</p> <p><i>Mathematics</i> — Trigonometry, surveying, analytic geometry</p> <p><i>Chemistry</i> — Inorganic</p> <p><i>Religious instruction</i> — Catechism</p>	<p><b>BELLES-LETRES</b></p> <p><i>English</i> — Grammar (completed), Composition and rhetoric; Lectures on style; Critical study of selections from the best authors; Letter writing; Descriptive and narrative composition, etc.; History of English literature; Sixth reader</p> <p><i>History</i> — Modern; Fredet</p> <p><i>Mathematics</i> — Arithmetic reviewed; algebra and geometry</p> <p><i>Book-keeping</i> — Completed and reviewed; Practical business</p> <p><i>Commercial law</i> — Lectures</p> <p><i>Elocution</i> — One hour a week</p> <p><i>Natural history</i> — Elements</p> <p><i>Chemistry</i> — Norton's</p> <p><i>Religious instruction</i> — Catechism</p> <p><i>Short-hand writing</i></p>

The full course consists of five years, the studies of the last four of which are given.



CLASSICAL COURSE	COMMERCIAL COURSE
<p>RHETORIC (JUNIOR CLASS)</p> <p><i>Latin</i>—Cicero's Orationes, De oratore, Ad Brutum, Horace, Juvenal, Persius Tacitus. Prose and verse composition</p> <p><i>Greek</i>—Demosthenes, Thucydides, Sophocles, Pindar, Longinus, Eschylus; Prose and verse composition</p> <p><i>English</i>—Precepts of rhetoric, lectures on the principles of rhetoric, the construction of a discourse, etc. Critical study of the best speeches in Goodrich's British eloquence, and of Shakspeare's Julius Caesar. The utmost attention is given to English composition. Debates are held every week</p> <p><i>Elocution</i>—One hour a week</p> <p><i>History</i>—Modern</p> <p><i>Mathematics</i>—Calculus</p> <p><i>Chemistry</i>—Organic</p> <p><i>Religious instruction</i>—Lectures on the evidences of religion</p>	<p>RHETORIC</p> <p><i>English</i>—Precepts of literature, Lectures on poetry and the construction of a discourse, etc.; Critical study of poetical extracts and select speeches; Poems and oratorical composition; History of English literature (completed); Debating society</p> <p><i>Elocution</i>—One hour a week</p> <p><i>History</i>—Fredet's Modern (completed)</p> <p><i>Mathematics</i>—Geometry (completed), trigonometry, surveying, analytic geometry</p> <p><i>Natural philosophy</i></p> <p><i>Chemistry</i></p> <p><i>Religious instruction</i>—Catechism</p>
<p>PHILOSOPHY (SENIOR YEAR)</p> <p><i>Mental philosophy</i>—Logic, metaphysics and ethics. First term: Logic and ontology. Second term: Cosmology, psychology and theodicy. The general principles of ethics and civil society. The lectures are given in Latin. The students are required to speak Latin, and defend their theses every week in that language</p> <p><i>Natural philosophy</i></p> <p><i>Mechanics</i></p> <p><i>Astronomy</i></p> <p><i>Elocution</i>—One hour a week</p> <p><i>Religious instruction</i>—Lectures on the evidences of religion</p>	<p>PHILOSOPHY</p> <p><i>Philosophy</i>—Mental and moral</p> <p><i>English</i>—Lectures, Essays. Debating society</p> <p><i>Mathematics</i>—Analytic geometry (completed). Calculus</p> <p><i>Mechanics</i>—Elements</p> <p><i>Astronomy</i></p> <p><i>Geology</i></p> <p><i>History</i>—Lectures</p> <p><i>Religious instruction</i>—Evidences of religion</p>
<p>POST-GRADUATE DEPARTMENT</p> <p><i>First term</i>—Ethics and the principal systems of mental philosophy</p> <p><i>Second term</i>—Principles of civil society, of political economy, and of international law. The relations of church and state. History of philosophy. In this, as well as in the first year of philosophy, the students are obliged to defend their theses, both in class and before the faculty, against some of their own number, or against professors and others appointed to attack them. Such discussions are usually carried on in Latin. The members of this class are required to write dissertations and essays, in English, on the various matters of their course</p> <p>Various branches of natural science and the modern languages can be studied in this course</p>	<p>PREPARATORY AND OPTIONAL STUDIES</p> <p>1 A special Latin class, which is intended to advance young men who come late in the year, or are too old to enter the ordinary grammar classes. The students of this class are promoted to the regular class to which their success in the January or June examination entitles them</p> <p>2 Book-keeping is optional for the undergraduates</p> <p>3 Italian, Spanish and drawing are optional at extra charges</p>

## REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts is conferred at the close of the college course. The degree of bachelor of science is given at the end of the science course. The candidates for this honor are required to undergo an examination in natural, mental and moral philosophy, in evidences of religion, in the philosophy of history, and in higher mathematics. Such candidates must also give evidence of having attained a specified standard in Greek, Latin and general literature.

A degree is conferred at the close of the commercial course. At the end of the post-graduate year the degree of master of arts is conferred, after a satisfactory examination.

## BUILDINGS

Main buildings, two story stone, built 1823, floor area 3,600 sq. ft., value \$5,000, and two story brick, built 1868, floor area 7,500 sq. ft., value \$6,000. Chapel, stone, built 1843, floor area 7,200 sq. ft., value \$10,000. Dormitories, class rooms and gymnasium in senior and junior building. Science building, including laboratory, museum, etc., two story stone, built 1885, floor area 4,000 sq. ft., four class rooms, 150 seats, value \$40,000. Senior building five story stone, built 1866, floor area 6,000 sq. ft., 10 class rooms, 300 seats, value \$60,000. Junior building, five story stone, built 1890, floor area 7,200 sq. ft., 12 class rooms, 300 seats, value \$60,000. Under freshmen building, three story stone, built 1843, floor area 3,600 sq. ft., eight class rooms, 150 seats, value \$10,000. Other buildings, wood and stone, valued at \$10,000.

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## UNIVERSITY OF ROCHESTER

*Rochester*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month - Year

1845-6 Efforts made to secure incorporation of Hamilton Literary and Theological Institute as a college and to remove it to a more western place.

Month	Year	
	1846	University of Rochester chartered conditionally by legislature. Removal of Hamilton Institute authorized by law but prevented by injunction of the courts. Conditions of charter not fulfilled.
31 Ja	1850	Approbation of regents and promise of charter obtained with proviso that \$130,000 be subscribed within two years of its establishment, \$30,000 to be invested in land and buildings, \$100,000 in permanent endowment. 20 of the first 24 trustees baptists.
N	"	First classes organized. Many students from Madison University joined.
2 D	"	Money raised. U. S. Hotel on Main st. bought.
14 F	1851	Final charter obtained; still subject to some conditions.
5 F	1856	Pecuniary conditions imposed by regents not fulfilled. Extension obtained.
10 Ja	1861	Pecuniary conditions removed.
9 Jl	"	New building, Anderson Hall, first occupied.

### TRUSTEES

President, Rev. Edward Bright, D. D.....	New York
First Vice-President, Gen. John F. Rathbone...	Albany
Second Vice-President, Edward M. Moore, M. D.,	
LL. D.....	Rochester
Secretary and Treasurer, William N. Sage, M. A.,	"
Attorney, Martin W. Cooke, M. A.....	"
Elon Huntington.....	"
Lewis Roberts.....	Tarrytown
Edwin O. Sage, B. A. ( <i>Class of '53</i> ).....	Rochester
John B. Trevor.....	Yonkers
Hon. Francis A. Macomber, LL. D. ( <i>Class of '59</i> )	Rochester
Rev. Chas. DeW. Bridgman, D. D. ( <i>Class of '55</i> )	New York
John P. Townsend.....	"
Col. William H. Harris, M. A. ( <i>Class of '58</i> )....	Cleveland
Rev. Robert S. MacArthur, D. D. ( <i>Class of '67</i> )	New York
John H. Deane, M. A. ( <i>Class of '66</i> ).....	"
Rev. Samuel W. Duncan, D. D.....	Haverhill, Mass.
Hon. J. Sloat Fassett ( <i>Class of '75</i> ).....	Elmira

John P. Munn, M. D. ( <i>Class of '70</i> )	New York
Alanson J. Fox	Detroit
Colgate Hoyt	New York
Charles M. Williams, M. A. ( <i>Class of '71</i> )	Rochester

## VACANCIES

Martin B. Anderson, LL. D., L. H. D., Rochester, died 26 F 1890.

Rezin A. Wight, M. A., New York, died.

## ADMINISTRATION

Figures in column at left give first year of service in University of Rochester.

1888 President, David J. Hill, LL. D. 216 University av.

B. A. University of Lewisburg 1874, M. A. 1877; LL. D. Madison University 1884; Instructor in ancient languages, University of Lewisburg 1874-5, Instructor in rhetoric and English literature 1875-7, Professor of rhetoric 1877-9, President and professor of psychology and ethics 1879-88; President University of Rochester 1888-; Member American Academy of Political Social Science; Author *The science of rhetoric*, 1877, *The elements of rhetoric*, 1878, *Life of Washington Irving*, 1879, *Life of William Cullen Bryant*, 1880, *The principles and fallacies of socialism*, 1885, *Notes on political economy*, 1889, *Notes on anthropology*, 1885, *The elements of psychology*, *The social influence of Christianity*, *Notes on ethics*, 1891; Editor *Jevons' Logic*, 1884.

Treasurer, William N. Sage, M. A. Rochester.

1877 Secretary, Henry F. Burton, M. A. 63 East av.

B. A. University of Michigan 1872, M. A. 1875; Instructor in Latin and Greek, Denison University 1872-4; Instructor in Latin, University of Michigan 1874-5; Assistant Professor of Latin, University of Rochester 1877-83, Professor of Latin 1883-; Member American Philological Association, American Oriental Society.

1867 Chairman of Executive committee, Samuel A. Lattimore, Ph. D., LL. D. 277 University av.

B. A. De Pauw University 1850, M. A. 1853, Ph. D. 1873; LL. D. Hamilton 1873; Instructor in classics, De Pauw University 1850-2, Professor of Greek 1852-60; Professor of chemistry, Genesee College 1860-7; Professor of chemistry, University of Rochester 1867-; Fellow American Association for the Advancement of Science; Member American Chemical Society.



- 1880 Assistant Librarian, Herman K. Phinney, M. A., 8 Brighton av.  
 B. A. University of Rochester 1877, M. A. 1880; Teacher of  
 natural sciences and modern languages, LeRoy Academic  
 Institute 1877-8.

## INSTRUCTION

Figures in column at left give first year of service in University of Rochester and years  
 spent in teaching.

- 1888 David J. Hill, LL. D. President and Burbank Professor of  
 Intellectual and Moral Philosophy, 216 University av.

See also "Administration."

- 1850 Asahil C. Kendrick, D. D., LL. D. Munro Professor of the  
 56 Greek Language and Literature, 301 Alexander st.

B. A. Hamilton 1831, M. A. 1834; D. D. Union 1840; LL. D.  
 University of Lewisburg; Head of classical department,  
 Hamilton Academy 1828-9; Head of preparatory  
 department, Hamilton Literary and Theological Seminary  
 1832; Professor of Greek and Latin 1832-6; Professor of  
 Greek language and literature, Madison University 1836-50;  
 Professor of Greek, University of Rochester 1850-; Mem-  
 ber Oriental Society; Author Introduction to the Greek  
 language, 1834, Greek Ollendorf, 1851, Life and letters  
 of Emily C. Judson, 1857, Woll's Commentary on Hebrews  
 in Lange's Commentary of the New Testament, 1868; Com-  
 piler Our poetical favorites, 1871, Xenophon's Anabasis,  
 1873; Translator Olshausen's Commentary on the New Tes-  
 tament, 6 vols., Meyers' Commentary on John, 1885, Com-  
 mentary on the Epistle to the Hebrews for Amer. Baptist  
 New Testament Commentary, 1889.

- 1867 Samuel A. Lattimore, Ph. D., LL. D. Professor of Chem-  
 42 istry, 277 University av.

See also "Administration."

- 1850 Albert H. Mixer, M. A. Professor of Modern Languages,  
 41 278 Alexander st.

B. A. Colgate 1848; M. A. University of Rochester 1851;  
 Tutor, University of Rochester 1850-1; Tutor, Universities  
 of Berlin and Munich 1852-4; Professor of modern languages,  
 University of Rochester 1855-7; Professor of modern lan-  
 guages, University of Chicago 1857-60, Professor of Greek  
 1860-6; Professor of Greek in France and Italy 1866-7; Pro-  
 fessor of modern languages, University of Rochester  
 1868-; Member American Philological Association, Ameri-  
 can Modern Language Association; Author Manual of  
 French poetry, 1874.

1868 Joseph H. Gilmore, M. A. Deane Professor of Logic,  
25 Rhetoric and English, 31 Park av.

M. A. Brown University 1858; Instructor in Hebrew, Newton Theological Institution 1861-2; Acting professor of Hebrew, Rochester Theological Seminary 1867-8; Professor of logic, rhetoric and English, University of Rochester 1868- ; Author Little Mary, 1861, Declamations and dialogues for the Sunday school, 1871, Art of expression, 1875, Outlines of Logic, 1879, The English language and its early literature, 1879, Wedlock, 1882, Primary, intermediate and academic speakers, 1883, Chautauqua text-book of English literature, 1886.

1864 Otis H. Robinson, M. A. Harris Professor of Mathematics  
30 and Natural Philosophy, 273 Alexander st.

B. A. University of Rochester 1861, M. A. 1864; Teacher district school 1853-6; Principal graded school Arcadia 1856-7; Teacher mathematics, Rochester Collegiate Institute 1861-2; Assistant professor of mathematics, University of Rochester 1864-9, Professor of mathematics 1869-84, Professor of mathematics and natural philosophy 1884- ; Member American Association for the Advancement of Science.

1869 William C. Morey, Ph. D. Professor of History and Political  
22 Science, 426 Powers block.

B. A. University of Rochester 1868, M. A. 1871; Ph. D. Franklin College 1881; Instructor in Latin, University of Rochester 1869-70, Professor of history and English literature, Kalamazoo College 1870-2; Professor of Latin, University of Rochester 1872-7; Professor of Latin and history 1877-83, Professor of history and political science 1883- ; Member American Folk-lore Society, American Social Science Association, American Academy of Political and Social Science; Author Outlines of Roman law.

1877 Henry F. Burton, M. A. Professor of Latin, 63 East av.  
17 See also "Administration."

1881 George M. Forbes, M. A. Professor of Greek, 16 Tracy  
15 Park.

B. A. University of Rochester 1878, M. A. 1881; Assistant professor of Greek, University of Rochester 1881-6; Professor of Greek, 1886- .

1884 George D. Olds, M. A. Professor of Mathematics, 10 Arnold  
14 park.

B. A. University of Rochester 1873, M. A. 1876; Teacher in Albany Academy 1873-9; Assistant professor of mathematics, University of Rochester, 1884-6, Professor of mathematics, 1886 -; Member American Association for the Advancement of Science.

1889 Herman L. Fairchild, B. S. Professor of Geology and  
17 Natural History, 2 College av.

B. S. Cornell 1874; Professor of natural sciences, Wyoming Seminary 1874-6; Lecturer on natural sciences, New York schools 1876-88; Ad interim professor of geology, Vassar 1877-8; Lecturer on geology, Cooper Union 1878-88; Recording secretary New York Academy of Sciences; Fellow American Association for the Advancement of Science 1887; Secretary Geological Society of America 1890 -; Author History of the New York Academy of Sciences, 1887, and numerous contributions to scientific periodicals.

1889 J. Ross Lynch, B. A. Instructor in Mathematics, 202  
3 Tremont st.

B. A. University of Rochester 1885.

VACANCIES

1845 Martin B. Anderson, LL. D., L. H. D. Ex-president and  
Watson professor of political economy. Died 26 F 1890.

H NORARY DEGREES  
(None)

COLLEGE APPOINTMENTS

Valedictory, Albert H. Wilcox..... Rochester  
Salutatory, James B. Worman..... Ilfracombe, Eng.

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

DEWEY DECLAMATION PRIZES (SOPHOMORES)

	Value
First, John M. Taylor, Holley.....	\$20
Second, Judson J. Clark, Rochester .....	15

HULL ESSAY PRIZE

Charles S. Brown, Adams..... 60

## STODDARD MATHEMATICAL MEDAL

	Value
Olin H. Burritt, N. Chili . . . . .	\$80

## DAVIS ORATION PRIZES

First, Charles F. Bullard, Elmira . . . . .	30
Second, Albert H. Wilcox, Rochester . . . . .	20

## SHERMAN SCHOLARSHIP

Clement D. Child, Alabama . . . . .	300
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## REQUIREMENTS FOR ADMISSION

See table 2.



## COURSES OF STUDY

## FRESHMAN CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE	
Hours per week		Hours per week	
<b>FIRST TERM</b>		<b>FIRST TERM</b>	
3	Select orations of Lysias; Lectures on Attic law	5	The Greek in English
2	Greek syntax; and exercises in Greek prose composition	5	Latin, as in classical course
4	Livy, selections; Latin syntax; Latin composition	1	Elocution
1	Roman constitutional history (Mommesen)	5	Algebra
1	Elocution		
5	Algebra (Wells)		
<b>SECOND TERM</b>		<b>SECOND TERM</b>	
3	Greek historians, selections	5	Historical outline of the English constitution (Rannie)
2	Greek history, lectures on Greek ethnology, mythology and politics	5	Latin, as in classical course
4	Cicero's Letters, Terence or Plautus, with lectures on Latin etymology	1	Elocution
1	Roman constitutional history	5	Algebra; Geometry
1	Elocution		
5	Algebra; Geometry (Wentworth)		
<b>THIRD TERM</b>		<b>THIRD TERM</b>	
3	Greek lyric poets	5	Botany (Gray)
2	Greek history, lectures on Homeric criticism and Greek etymology	1	Elocution
1	Elocution	5	English, as in classical course
5	English language and its early literature, Gilmore; a letter from each member of the class, to be publicly criticised.	5	Geometry; Trigonometry
5	Geometry; Trigonometry, plane and spheric (Wentworth)		

## SOPHOMORE CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE	
Hours per week		Hours per week	
<b>FIRST TERM</b>		<b>FIRST TERM</b>	
4	Odes and satires of Horace, selections; Juvenal, selections	4	Latin, as in classical course
5	History of the Roman empire; Lectures on Latin literature	2	Roman history and literature, as in classical course
5	French grammar	5	French grammar
1	English -- Chaucer	1	English, as in classical course
5	Essay or letter	5	Mathematics, as in classical course
	Surveying and navigation (Wentworth); Analytic geometry (Wentworth)		
<b>SECOND TERM</b>		<b>SECOND TERM</b>	
4	Attic orators, selections	5	Determinants, loci in space and higher plane curves
1	Greek history; Lectures on Greek literature	5	French, as in classical course
3	La littérature Française classique	5	German, as in classical course
2	Manual of French poetry and the French dramatists (Mixer)	1	English, as in classical course
5	German grammar and reader	1	History, as in classical course
1	Lectures on English literature; Essays		
1	Historical geography of Europe, Lectures		
<b>THIRD TERM</b>		<b>THIRD TERM</b>	
	<b>REQUIRED</b>		<b>REQUIRED</b>
1	Lectures on Greek literature	5	Latin, as in classical course
5	The Agricola of Tacitus; Pliny's letters, selections; Lectures on Roman archeology	1	Lectures on French literature
1	Lectures on French literature	5	German, as in classical course
5	German reader; German dramatists		One essay
	One essay		
	<b>ELECTIVES</b>		<b>ELECTIVES</b>
5	Advanced French		As in classical course
5	Calculus		
5	Botany		

## JUNIOR CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE	
Hours per week		Hours per week	
FIRST TERM		FIRST TERM	
4	REQUIRED	4	REQUIRED
1	Logic	1	Logic
1	Lectures on English literature; Oral dissertations	1	Lectures on English literature; Oral dissertations
5	Physics, Kimball's Snell's Omstead with lectures and experiments in illustration of mechanics, hydrostatics, pneumatics, and acoustics	5	Physics, as in classical course
1	Illustrated lectures on chemical physics	1	Illustrated lectures on chemical physics
			ELECTIVES
5	Greek Plato, History of Greek literature, dissertations	5	German
5	German		
SECOND TERM		SECOND TERM	
1	REQUIRED	1	REQUIRED
1	Lectures on comparative philology	1	Lectures on comparative philology
5	Rhetoric; English literature; One essay	5	English, as in classical course
5	Physics, Kimball's Snell's Omstead, with lectures and experiments on optics, heat, magnetism, and electricity	5	Physics, as in classical course
5	Chemistry, lectures	5	Chemistry
THIRD TERM		THIRD TERM	
5	REQUIRED		REQUIRED
5	Astronomy (Young)	5	Astronomy
5	Medieval history (Stillé)	5	Medieval history (Stillé)
	One chapel oration		One chapel oration
			ELECTIVES
5	Latin, Roman law and history of philosophy		As in classical course
5	Chemistry, laboratory work		

## SENIOR CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE	
Hours per week		Hours per week	
<b>FIRST TERM</b>		<b>FIRST TERM</b>	
1	REQUIRED	1	REQUIRED
5	Lectures on the formation of the constitution of the United States	5	Lectures on the formation of the constitution of the United States
5	Human and comparative physiology — Huxley and lectures on Psychology	5	Physiology, as in classical course
	One chapel oration		Psychology
	ELECTIVES		One chapel oration
5	Outlines of Roman law (Morey)		As in classical course
5	Chemistry, laboratory work		ELECTIVES
<b>SECOND TERM</b>		<b>SECOND TERM</b>	
5	REQUIRED	5	REQUIRED
1	History of civilization in Europe (Guizot)	1	History of civilization in Europe (Guizot)
5	Lectures on sanitary science	5	Lectures on sanitary science
5	Ethics	5	Ethics
5	Zoology	5	Zoology
	One chapel oration		One chapel oration
<b>THIRD TERM</b>		<b>THIRD TERM</b>	
5	REQUIRED	5	REQUIRED
5	Political economy	5	Political economy
5	Geology	5	Geology
1	Lectures on physical geography	1	Lectures on physical geography
	One graduating oration		One graduating oration
	ELECTIVES		ELECTIVES
5	Chemistry, laboratory work		As in classical course
5	History of philosophy		



## ELECTIVE HONOR COURSES

Students whose scholarship is such that their attention can be diverted from their regular studies without detriment, are encouraged to pursue courses of study additional to the required curriculum, without competition for prizes.

Instruction will be given in these elective honor courses by the heads of departments; and the subject matter assigned in each course will be, as nearly as possible, equivalent to one term's work in the department in which it is offered.

FRESHMAN CLASS	SENIOR CLASS
1 Latin. Cicero's Essays, Terence or Plautus	1 Modern languages. A course in (a) Old French, or (b) Old German, or (c) German history and literature
2 Mathematics. Todhunter's Theory of equations	2 Physics and astronomy. Analytic mechanics, with applications to physical astronomy
SOPHOMORE CLASS	3 Chemistry. Laboratory work on a selected topic — with thesis
1 Greek. Attic orators or Thucydides	4 Metaphysics. Kant's Critique of pure reason, or Lotze's metaphysics
2 Latin. The elegiac poets, or Pliny's Letters	5 Political economy. History of political economy, or Hamilton's Political economy
3 Mathematics. Loc in space and higher plane curves, or advanced trigonometry	6 Ethics. The history of ethics, or the criticism of modern ethical theories
JUNIOR CLASS	7 History and political science. International law, or comparative jurisprudence — with thesis on a special topic
1 Greek. Plato	8 Physiology. Investigation of selected topic — with thesis
2 Latin. Quintilian or Lucretius	9 Zoology. A study of some selected group of animals — with thesis
3 Mathematics. Quaternions, or the differential and integral calculus with application to mechanics	10 Geology. A study of the strata, the fossils, or the surface deposits about Rochester — with thesis
4 Dialectics. A course in extension of (a) Logic, or (b) Rhetoric	11 Greek. Aristotle
5 Modern languages. Italian, or a course of reading in French history and literature	
6 History. The constitutional and political history of the United States, or the history of the European colonial system — with a thesis on a special topic	
7 The English Bible. Lectures introductory to the study of the New Testament	
8 Philology. A course in Sanskrit and comparative grammar	
9 Botany. The study and collection of some selected group of the local flora	

## REQUIREMENTS FOR GRADUATION

Students who satisfactorily complete the classical course receive the degree of bachelor of arts.

Those who satisfactorily complete the scientific course receive the degree of bachelor of science.

## BUILDINGS

Main building, three story stone, built 1860, floor area 36,480 sq. ft., 14 class rooms, value \$40,000. Library, two story stone, built 1875, floor area 16,800 sq. ft., one class room, value \$100,000. Laboratory, two story stone, built 1886, floor area 9,200 sq. ft., two class rooms, value \$30,000. Museum included in library building. Observatory, one story wood, built 1876, floor area 250 sq. ft., value \$600. President's house, three story brick, value \$25,000.

## ADDITIONAL INFORMATION

A gift of \$20,000 for general endowment from John B. Trevor of New York, and a bequest of the estate of Dr and Mrs M. B. Anderson, subject to some annuities and valued at about \$40,000 have been received during the past year.

A department of biology has been added.

The requirements for admission have been increased, and the course of instruction increased about one-third. Two new courses have been introduced — the Latin-scientific course and the Greek-scientific course, each leading to the degree of bachelor of philosophy.

## COLLEGE OF THE CITY OF NEW YORK

*17 Lexington av., New York.*

## HISTORIC SKETCH

For list of date abbreviations see page 254.

Month Year

7 My 1847 Legislature sanctioned establishment of New York Free Academy. Question of maintenance by tax referred to electors.

9 Je “ Law ratified by citizens of New York city at special election.

Month Year

- 27 Jl 1848 Academy established. First free academy in New York state.
- 27 Ja 1849 Academy opened. Admitted only graduates of the public schools.
- 15 Ap 1854 Legislature granted power to confer degrees.  
1857 Alumni Association established students' aid fund for deserving students. Sums lent without interest.
- 30 Mr 1866 Legislature changed name to College of the City of New York. Members of board of education made ex-officio trustees of college. College subject to visitation of regents.
- 1 My 1872 Legislature fixed college endowment at \$150,000. President of college a trustee.  
1882 Legislature repealed certain statutes regarding requirements for admission. Instruction and use of text-books and apparatus free.
- N 1883 Course opened in mechanic arts, not for teaching any particular trade, but the processes and methods that have general application.

## TRUSTEES

Chairman, J. Edward Simmons.....	28 W. 52 st.
<sup>1</sup> Secretary, Arthur McMullen.....	Hall of Board of Education
<sup>1</sup> Ass't Sec'y, Edward E. Van Saun... ..	“ “ “
Mrs Mary N. Agnew.....	266 Madison av.
Frederick W. Devoe.....	Fordham
Robert M. Gallaway.....	68 E. 55 st.
R. Guggenheimer.....	16 E. 81 st.
Charles L. Holt.....	117 W. 130 st.
John L. N. Hunt.....	207 W. 59 st.
Frederick Kuhne.....	735 Madison av.
Thaddeus Moriarty.....	39 W. 130 st.
Miles M. O'Brien.....	240 E. 60 st.
Edward H. Peaslee.....	29 Madison av.
Mrs Sarah H. Powell.....	324 W. 58 st.
Samuel M. Purdy.....	West Farms
Adolph L. Sanger.....	50 E. 63 st.

<sup>1</sup> Not a trustee.

Ferdinand Traud.....	1371 Franklin av.
Jacob D. Vermilye .....	4 W. 51 st.
Alexander S. Webb.....	15 Lexington av.

## APPOINTED DURING YEAR

James W. Gerard .....	17 Gramercy park
C. B. Hubbell.....	143 W. 64 st.
William Loomis .....	56 W. 49 st.
Joseph F. Mosher.....	344 W. 22 st.
Mrs Clara M. Williams.....	130 W. 70 st.

## VACANCIES

Grace H. Dodge, 262 Madison av., term expired  
 Henry Schmitt, 29 Vandam st., term expired  
 De Witt C. Seligman, 328 W. 58 st., term expired  
 Henry L. Sprague, 330 W. 23 st., term expired  
 H. Walter Webb, 15 W. 47 st., term expired

## ADMINISTRATION

Figures in column at left give first year of service in College of the City of New York

1869 President, Alexander Stewart Webb, LL. D., 15 Lexington av.

LL. D. Hobart 1869; Assistant professor of mathematics,  
 U. S. Military Academy 1857-61, Principal assistant pro-  
 fessor of geography, history, law and ethics 1866-8; Author  
 The peninsular campaign.

1848 Vice-President, Jean Roemer, LL. D., 19 E. 44 st.

M. A. Columbia 1853; LL. D. Middlebury College 1856; Vice-  
 President College of the City of New York 1860; Honorary  
 Member U. S. Cavalry Association; Author English and  
 French dictionary of idioms, Polyglot reader, English, French,  
 German, Spanish, Italian; Cours de lecture et de traduction,  
 Principles of German grammar, Origins of the English people  
 and the English language, Cavalry, its history, management  
 and uses in war.

1857 Secretary, Adolph Werner, Ph. D., 339 W. 29 st.

B. S. College of the City of New York 1851, M. S. 1860; Ph. D.  
 Rutgers Female College 1881; Tutor, College of the City of  
 New York 1857-61; Professor of German 1861.

1869 Librarian, Charles George Herbermann, Ph. D., LL. D., 223  
 W. 25 st.

B. A. St John's College 1858, M. A. 1861; Ph. D. College of St  
 Francis Xavier 1865, LL. D. 1883; Author Business life in  
 ancient Rome; Editor Sallust's Jugurtha, 1886, Sallust's  
 Cataline, 1890.



Registrar and Deputy Librarian, Robert W. Cana.

Secretary to the President, Henry Mayell.

Janitor, Michael F. Bonney.

Engineer, James Reed.

## INSTRUCTION

Figures in column at left give first year of service in College of the City of New York and years spent in teaching.

1869 Alexander Stewart Webb, LL. D., President, 15 Lexington  
28 av.

See also "Administration."

1848 Jean Roemer, LL. D., Professor of the French Language  
43 and Literature, 19 E. 44 st.

See also "Administration."

1852 Robert Ogden Doremus, M. D., LL. D. Professor of  
42 Chemistry and Physics.

B. A. University of the City New York 1842, M. A. 1845, M. D. 1850, LL. D. 1870; Professor of chemistry, New York College of Pharmacy 1849-61; Professor of toxicology, New York Medical College 1850-61; Professor of natural history, anatomy, physiology and hygiene, College of the City of New York 1852-61, Professor of chemistry and physics 1863-90; Professor of chemistry and toxicology, Long Island Hospital Medical College 1859-61; Professor of medical jurisprudence, Bellevue Hospital Medical College 1861-; Author Methods for disinfection of hospitals and ships, Duties of the toxicological chemist.

1857 Adolph Werner, Ph. D. Professor of the German Language  
33 and Literature, 339 W. 29 st.

See also "Administration."

1853 Alfred George Compton, M. A. Professor of Applied Mathe-  
37 matics, 40 W. 126 st.

B. A. College of the City of New York 1853, M. A. 1856; Member American Society of Civil Engineers and American Institute of Electrical Engineers; Author Manual of logarithmic computation, First lessons in wood-working, First lessons in metal-working.

1869 Charles George Herbermann, Ph. D., LL. D. Professor of  
33 the Latin Language and Literature, 223 W. 25 st.

See also "Administration."

- 1871 David Burnet Scott, Ph. D. Professor of the English  
48 Language and Literature, 112 W. 122 st.

M. A. Union 1860; Ph. D. Lafayette College 1879; Principal Grammar School 40, 1849-70; Professor and principal introductory department, College of the City of New York 1870-7; Professor of English language and literature 1877; Author of three school histories of U. S., 1860-73.

- 1859 Solomon Wolfe, M. A. Professor of Descriptive Geometry  
31 and Drawing.

B. A. College of the City of New York 1859, M. A. 1862; Tutor, College of the City of New York 1859-78; Professor of descriptive geometry and drawing 1878-; Author Manual of descriptive geometry.

- 1879 George Benton Newcomb, Ph. D. Professor of Moral and  
12 Intellectual philosophy.

B. A. Williams 1856, Ph. D. 1881.

- 1860 Fitz Gerald Tisdall, Ph. D. Professor of the Greek Lan-  
32 guage and Literature, Woodbridge, N. J.

B. A. College of the City of New York 1859, M. A. 1862; Ph. D. University of the City of New York 1874; Tutor, College of the City of New York 1859-79; Director Schools of Science and Art, Cooper Union 1870-9; Professor of Greek, College of the City of New York 1879-; Member Archeological Institute of America and American Philological Society; Author A theory of the heroic hexameter, 1889.

- 1879 James Wier Mason, M. A. Professor of Pure Mathematics,  
25 32 W. 129 st.

B. A. College of the City of New York 1855, M. A. 1858; Principal Albany Academy 1863-8; Member American Archeological Society and American Actuarial Society.

- 1879 Henry Phelps Johnston, M. A. Professor of History, 132  
15 E. 24 st.

B. A. Yale 1862, M. A. 1888; Tutor in history, College of the City of New York 1879-85, Professor of history, 1885-; Corresponding member Connecticut Historical Society; Author Campaign of 1776 around New York and Brooklyn, 1878, The Yorktown campaign and surrender of Cornwallis, 1881, Observations on Judge Jones' loyalist history of the American revolution, 1880, Yale and her honor-role in the revolution, 1888, Correspondence and public papers of John Jay, 1890; Associate Editor Magazine of American History, 1882-.

1866 William Stratford, M. D., Ph. D. Professor of Natural  
24 History.

B. A. College of the City of New York 1865, M. A. 1868; Ph. B. University of the City of New York 1870, M. D. 1870, Ph. D. 1872; Tutor, College of the City of New York, 1866-; Adjunct professor of chemistry and physics, Medical Department University of the City of New York 1870-5; Professor of natural history College of the City of New York 1885-.

1852 Benjamin Arad Sheldon, Ph. D. Tutor in Mathematics, 48  
40 Morton st., Brooklyn.

B. A. University of the City of New York 1852, M. A. 1858, Ph. D. 1870; Assistant in library and office.

1856 Cassimir Fabregon, M. A. Tutor in French.

42 B. L. University of France 1849; M. A. University of the City of New York 1860.

1870 William George McGuckin, B. A., LL. B. Tutor, 126 W.  
20 129 st.

B. A. College of the City of New York 1869; LL. B. Columbia 1881.

1870 John Robert Sim, B. A. Tutor, New Rochelle.

20 B. A. College of the City of New York 1868.

1877 Leigh Harrison Hunt, M. S. Tutor and Instructor in Descrip-  
14 tive Geometry, Flushing.

B. S. College of the City of New York 1877, M. S. 1883; M. D. University of the City of New York 1880; Instructor in pathological laboratory, University Medical School 1880-5; Member Archeological Institute of America; Translator Charcot's Diseases of old age, Verrier's Treatise on obstetrics.

1878 Julius C. Morgenthau, Ph. D., Tutor, 42 W. 75 st.

9 B. A. College of the City of New York 1878, M. A. and Ph. D. University of Leipzig 1886; Tutor, College of the City of New York 1878-82 and 1886-; Member Society for the Promotion of Hellenic Studies, London, American Institute of Archeology; Published Ueber den zusammenhang der Bilder auf griechischen Vasen, 1886.

1875 Ivin<sup>s</sup> Sickels, M. S., M. D. Tutor, 17 Lexington av.

16 B. S. College of the City of New York 1874, M. S. 1878; M. D. University Medical College 1883; Instructor in chemistry, University Medical College 1881-8; Lecturer in chemistry 1888; Author Exercises in wood-working.

1880 Calvin Rae Smith. Tutor in Drawing, 293 Decatur st.  
 11 Assistant Professor, National Academy of Design 1881-2.  
 1880 Joseph Francis Mulqueen, M. A. Tutor, 49 E. 78 st.

10 B. A. College of the City of New York 1880; M. A. College of  
 St Francis Xavier 1882; LL. B. Columbia 1884; Member  
 Archeological Institute of America.

1882 Charles Avery Doremus, M. D. Ph. D. Tutor and Assistant  
 16 in Laboratory, 49 E. 29 st.

B. A. College of the City of New York 1870; M. A. and Ph. D.  
 Heidelberg 1873; M. D. University of Buffalo 1879; Assistant in  
 chemistry, Bellevue Hospital Medical College 1875; Adjunct  
 professor of chemistry and toxicology, Bellevue Hospital  
 Medical College 1878; Professor of chemistry and toxicology,  
 University of Buffalo, Medical Department 1877-82; Professor  
 of chemistry, American Veterinary College 1882; Member  
 American Chemical Society, Deutsche Chem. Gesell., Société  
 Chimique; Honorary Member Massachusetts Medico-Legal  
 Society, Co-Editor Journal, American Chemical Society, 1882,  
 Synopsis course general chemistry.

David Cherbuliez, Tutor.

1883 Gustav Legras, B. S. Tutor in Mathematics, 44 E. 79 st.

10 B. S. College of the City of New York 1879.

1884 Lewis Freeman Mott, M. S. Tutor in English, 367 W.  
 8 19 st.

B. S. College of the City of New York 1883, M. S. 1886; Member  
 Modern Language Association of America.

1884 Harvey Mitchell, M. E. Tutor.

7 M. E. Stevens Institute; Director Apprentice School of the  
 Brook's Locomotive works 1884-; Member American Asso-  
 ciation for the Advancement of Science.

1884 Augustus Rupp, B. A. Tutor, 63 Seventh st.

6 B. A. College of the City of New York 1884; Member American  
 Association for the Advancement of Science.

1885 Luis Alejandro Baralt, B. A., M. D. Special Instructor in  
 24 Spanish Language and Literature, 211 W. 14 st.

B. A. Institute of Santiago de Cuba 1867; M. D. Bellevue Hos-  
 pital Medical College 1872; Professor of grammar and Greek,  
 Santiago College 1867-9; Instructor in Spanish (substitute)  
 Columbia College 1883.



1885 Robert Houston, Special Instructor in Elocution.

30

1885 Henry G. Kost, B. S. Tutor Department of German, 164  
9 E. 70 st.

B. S. College of the City of New York 1880.

1886 L. Heinrich Friedburg, Ph. D. Tutor in Chemistry and  
20 Physics, 1104 Lexington av.

Ph. D. University of Göttingen 1870; Assistant, Heidelberg 1870-1; Préparateur de la station agricole à Gembloux (Belgium) 1872-3; Assistant, Leipzig and Bonn 1873; Assistant, Göttingen 1873-4; Assistant, Berlin 1874-8; Chemist Agricultural Experiment Station at Kiel 1878-9; Assistant, Columbia College 1879; Professor of chemistry, Manhattan College 1884-5; Special instructor of chemistry and physics, College of the City of New York 1886-90; Teacher of chemistry, Evening High School, 1890-; Tutor of analytical chemistry, American Veterinary College 1890-; Co-editor Journal of the American Chemical Society; Member American Chemical Society, German Chemical Society.

1885 John Alfred Mandel. Tutor and Assistant in Laboratory,  
8 26 Wardell st., Astoria.

Assistant, Chair of chemistry and toxicology, Bellevue Hospital Medical College 1883-; Member American Chemical Society.

Bashford Dean, Ph. D. Tutor, 41 Highland av., Yonkers.

B. A. College of the City of New York 1886; M. A. Columbia College 1889, Ph. D. 1890; Junior assistant in chemistry, University Medical School 1885-6; Honorary Assistant in geology, Columbia College 1889-; Instructor in Biology, Barnard College 1890-; Director Cold Spring Harbor School of Biology (Brooklyn Institute) 1890-; Author Contribution to New York state fisheries commission's reports.

1887 William Fox, B. S., M. E. Tutor, 319 E. 17 st.

7

B. S. College of the City of New York 1884; M. E. Stevens Institute of Technology 1886.

James Hervey De Groat, Assistant in Workshop.

1888 H. Wheeler Powell, B. S. Tutor in Mathematics, 40  
2 W. 126 st.

B. S. College of the City of New York 1883.

1888 Carl Schurz Petrasch, B. S. Tutor, 71 W. 55 st.

2

B. S. College of the City of New York 1886.

1888 C. Howard Parmly, B. S. Tutor, 344 W. 29 st.

2 B. S. College of the City of New York 1888.

1888 Walter O'Brien, M. D. Tutor, 105 Baltic st., Brooklyn.

3 M. D. University of the City of New York 1890.

1888 Frederic E. Perham, B. S. Tutor, 240 W. 127 st.

2 B. S. College of the City of New York 1888.

1889 Stanislas C. Constant, Tutor, 142 E. 48 st.

30

1889 Louis Fennebresque, B. S. et L. Tutor, 272 W. 116 st.

5 B. L. Academy of Poitiers 1862; B. S. Academy of Paris 1863.

1883 Ernest Ilgen, B. A. Tutor, 369 Herkimer st., Brooklyn.

4 B. A. College of the City of New York 1882; Tutor, College of the City of New York 1883-5 and 1889-.

Charles F. Horne, B. S. Temporary Tutor.

Livingston Schuyler, B. A. Temporary Tutor.

#### VACANCIES

20 George C. Hollerith, tutor. Resigned.

#### APPOINTED DURING YEAR

Stanislas C. Constant, tutor.

Louis Fennebresque, B. S. et L., tutor.

Charles F. Horne, B. S., tutor.

Ernest Ilgen, B. A., tutor.

Livingston Schuyler, B. A., tutor.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

Valedictory, Paul L. Saurel . . . . .	158 W. 16 st.
Salutatory, Burton C. Meighan . . . . .	Riverdale
Third honor, Arthur F. J. Rémy . . . . .	2516 Eighth av.
Fourth honor, Clarence DeW. Rogers . . . . .	64 E. 61 st.
Fifth honor, Leonard L. Breitwieser . . . . .	74 Seventh st.
Sixth honor, Otto T. Louis . . . . .	112 av. A

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

## CROMWELL MEDALS FOR HISTORY AND BELLES-LETTRES

*Sophomores*

First, Alfred A. Cook

Second, Herman B. Baruch

A certificate of equal merit with Herman B. Baruch, to Edward  
A. Alexander and Charles A. Lawrence

## BELDEN MATHEMATICAL MEDALS

*Sophomores*

First, Ernest A. von Fintel

Second, Charles A. Lawrence

Third, Edward A. Alexander

*Juniors*

First, Samuel Friedwald

Second, Howard S. Meighan

Third, Sydney L. Wood

Fourth, Frederick G. Reynolds

Fifth, Louis Dreyfuss, jr

Sixth, Arthur T. H. Timmerman

## F. W. DEVOE PRIZES

*Sophomores*

Wood-working, Arthur Bruckner

*Juniors*

Metal-working, Arthur T. H. Timmerman

## CLAFLIN CLASSICAL MEDALS

*Freshmen*

Greek, August P. Bjerregaard

Latin, August P. Bjerregaard

*Juniors*

Latin, Samuel Friedwald

*Seniors*

Greek, Arthur F. J. Rémy

## WARD MEDALS

*Freshmen*

Descriptive geometry, Moses S. Levussove

*Sophomores*

Logic, Herman B. Baruch  
 French, James T. Kilbreth, jr  
 History, Alfred A. Cook  
 Drawing, Warren M. Craft

*Juniors*

Spanish, David J. Hamburg  
 German, Carl Theobald, jr  
 Political science, Howard S. Meighan  
 English, Sydney L. Wood

*Seniors*

Greek, Lawrence Veiller  
 Latin, Edmund Burke  
 Chemistry, Paul L. Saurel  
 Natural history, Paul L. Saurel  
 Natural philosophy, Frank Schlesinger  
 Oratory, Arthur W. Handy  
 Composition, William Stuart  
 Moral philosophy, Clarence DeW. Rogers  
 Astronomy, Paul L. Saurel

Certificates of equal merit with their classmates who received the medals, were awarded as follows :

*Seniors*

Greek, Arthur F. J. Rémy  
 Moral philosophy, Paul L. Saurel

## RIGGS COMPOSITION MEDALS

*Juniors*

Harry Necarsulmer

*Seniors*

Max J. Kohler

## PELL MEDALS FOR HIGHEST RANK

*Seniors*

First, Paul L. Saurel  
 Second, Burton C. Meighan

*Juniors*

Third Howard S. Meighan

## PRIZES OF THE PRESIDENT OF THE BOARD OF EDUCATION

Poetry declamation, James J. K. Hackett (junior)  
 Prose declamation, Arthur W. Handy (senior)



## KELLY PRIZES (SENIORS)

For best debate, Charles A. Brodek

For best critique, Max J. Kohler

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## English language and literature

Throughout the freshman year one hour a week is given to the study of Graham's synonyms. Combined with this there is also instruction given in etymology.

In the sophomore year the history of English literature is pursued, text-book : Shaw. A knowledge of the chronological arrangement of English authors, their chief works, together with the leading facts in their lives 'is what is chiefly aimed at. Bain's rhetoric is begun and finished during the year, and written compositions are required from the entire class during both terms.

During the junior year the text-book is thrown aside, and oral lectures, together with the reading of selections forms the business of the year.

The first term's work deals entirely with poetry, the second term's with prose. The aim in both terms is to furnish a philosophical classification of writers, through analysis and criticism.

Compositions are required from juniors and seniors during both terms. After having been examined by the professor and his assistant, these compositions are delivered as orations on the chapel stage.

## Latin language and literature

One year is devoted wholly to the study of the prose-writers on which the syntax is based, Cæsar, Cicero, Sallust. The students then take up Virgil and Horace, and the ante-classic and post-classic writers. To keep before them the ideal of classic prose, some of Cicero's writings are read in the junior and senior years. To make the study of Latin a means of acquiring a more thorough command of the mother tongue, idiomatic translation is insisted on.

The subject matter is explained thoroughly and illustrated by reference to history, mythology, art, social and political antiquities, law and etymology.

A course of one year is open to such of the scientific seniors as elect it. They read selections from Cæsar and Sallust, an oration of Cicero and a book of Virgil.

### Greek language and literature

The study of Greek is begun in the freshman year. The students learn the paradigms, the orthography, and the general rules or syntax, complete a course of 55 lessons in White's Lessons in Greek, and read two chapters of the first book of the Anabasis.

In the sophomore year etymology and the general rules of syntax are thoroughly reviewed and the details studied. There are weekly exercises in the elements of Greek prose composition.

Selected passages are read in the first four books of the Anabasis, the Memorabilia and a dialogue of Plato. During this year a parallel is drawn between the Greek and Latin syntax, and the difference of the English idioms dwelt upon.

In the junior year the exercises in composition are continued. Attention is directed to the formation of words. Either three popular orations of Demosthenes or selections from the De Corona are read, with attention to history and geography, and a critical analysis of the orator's style. About two books of either the Iliad or the Odyssey are read, attention being given to the scan-sion and Homeric syntax and dialect; and the Homeric question is presented.

The seniors read selections from Herodotus and Thucydides, accompanied with criticism of the styles and short lectures on the historical episodes discussed. Also there are read portions of a tragedy and an entire comedy. Lectures are given on the drama and theater, and on the Greek language and literature.

### French language and literature

In the scientific and mechanical courses, French is studied by all the students during three years, and optionally by some in the senior year.

In the freshman year, the work consists, first, of oral translation from the French, based upon logical and grammatical analysis, and aiming at the idiomatic rendering into English of the

foreign text ; second, of retranslation and phraseological exercises, both by imitation and by application of the grammar.

In the sophomore year, the time is devoted, first, to the written translation of English selections into French ; second, to the reading of passages from modern novels and plays ; third, to giving oral and written résumés of these passages.

In the optional senior course of one hour weekly, some short work of modern prose is read critically, and a series of lectures is delivered on the history of the French language and of the Norman-French in England.

For students of the classical course, who elect French in the senior year, the course is so modified as to apply to advantage their previous training, especially their knowledge of Latin.

The students in the mechanical division follow the course above laid down for the scientific students with appropriate modifications.

Text-books: Robertson's *Method* and Roemer's *Cours de lecture*, *Etude raisonnée*, *Contes et mélanges*, *Histoire et Roman historique* and *Polyglot reader*.

### German language and literature

Eysenbach's *Grammar* is introduced at the beginning of the freshman year, and continued at the rate of one lesson a week through the sophomore year, and of two lessons a week through the junior year, at the close of which it is completed. In the sophomore and junior years, selections in prose and verse are read. Those students who choose to continue in this department through the senior year read in Goethe, also a comedy and a scientific essay ; they are exercised in composition and conversation.

In the one-year senior course, also, the work proceeds in the direction above stated ; but, of necessity, is less extended.

In both courses poetry is memorized, and prose is so taught that the students can produce the German when the teacher gives the translation.

### Spanish language and literature

The study of the Spanish language and literature is carried on in all three courses—the classical, the scientific and the mechanical.

The scientific students begin Spanish in the freshman year. The elements of the language are acquired by the study of selec-



tions from Butler's Phrase book, and the reading of selections in prose and verse from Iriarte and Morales' Reader.

In the sophomore year, Quintana's Lives are read, exercises in dictation are added, and Sales' Grammar and Pizaro's Phrases are used.

The juniors review the grammar by the study of Sales' work; they translate Moratin's comedy, *El si de las Niñas*, and selections from Don Quijote; make oral and written translations of English selections of various styles; write Spanish compositions; and study Spanish versification and literature.

The work of the classical students in the senior class does not differ materially from that outlined above, except as it is affected by the shortness of the course.

The instruction in the mechanical course is in the main the same as in the scientific course.

In all the classes practical exercises in dictation, translation, analysis, composition and conversation are considered of great importance.

### History

The history course extends through the first three years in all the courses. The freshman class study Myers' General history and Freeman's General sketch, with map illustrations and exercises.

This general view of the history of Europe is succeeded, in the sophomore class, by the thorough study of English history. Text-book: Thompson's History. The instructors add largely, by explanation and lecture, to the matter contained in the text-book.

In the junior year lectures are delivered upon such American topics as the following: The gradual unfolding of the New World to the Old; the struggle for possession here by European powers; Colonial life and tendencies; the growth of liberty and of local self-government, involving the relation of American history to English; the Revolution; the new order of things; history of American politics, etc. Students are called upon to discuss the subjects in the class-room, where they also become familiar with the standard and, as far as possible, original authorities on American history. Reference book: Eliot's History of the United States.



## Philosophy

The studies in this department are commenced in the sophomore year. Logic, deductive and inductive, is then studied, as a discipline preparatory to the whole course. Text-book : Jevons' Lessons.

The philosophical studies of the junior year are in the field of political and social science. The first term is devoted to political science. A course of lectures is given, indicating the foundations of law and government in human nature, tracing the growth of law and governmental forms and the development of the modern constitutional state, and discussing questions in the philosophy of government and legislation. American constitutional law is studied in Cooley's and Kent's expositions, with comparison of our own and other systems. A brief view of international law is given, Woolsey's manual being used as a basis. In the second term economic science is taken up ; the intimate connection of the economic with the political structure and development of society having already been considered, the study continues to be one of social development, but in its economic phase. Text-book : Walker's. Lectures are given on special topics, such as the money system of the United States.

The senior year studies are, psychology, philosophy and ethics. The principles of pedagogics, as based in psychology, are treated of, in connection with psychology, but in a separate course of lectures on theory of teaching.

The instruction of the year is chiefly by lectures, with selections from manuals and with directions for reading. In psychology, the aim is to present a descriptive view of the phenomena and laws of mental action, and also, without dwelling much on philosophical questions, to make the study lead up to philosophy. The positions of different schools on controverted points are noticed. Attention is given to physiological psychology.

The subjects of the second term are general philosophy and ethics. The philosophical doctrines and systems of most historic importance are, as far as time admits, examined and the development or speculative thought traced, to aid in elucidating the principal questions now discussed by philosophers. Political, educational and ethical theories are examined, and select topics in practical ethics are discussed, with the aid of Janet's Manual.

Theses on assigned topics in the course are prepared and discussed by students during the junior and senior years.

## Mathematics

The course in pure mathematics is the same for all students as far as the close of the sophomore year.

The freshman class complete geometry; they study mensuration and plane trigonometry, using Wheeler's Treatise as a text-book, and higher algebra, including the theory of logarithms from Loomis' Treatise; and are practiced in logarithmic computation, using Compton's Manual.

In the first term the sophomore class go through Wheeler's Spherical trigonometry, Docharty's Surveying and navigation, and in the second term, Peck's Analytical geometry, embracing the geometry of three dimensions as far as surfaces of revolution.

Mathematics is not obligatory upon classical students beyond the sophomore year; but such as may elect to pursue the study join the students of the scientific and mechanical courses in the study of calculus, which is the work of the junior year. Text-book: Peck's Treatise completed as far as the applications to mechanics and astronomy.

## Applied mathematics

In the scientific and mechanical courses, in the junior year, while the student is acquiring, in the department of pure mathematics, the knowledge of the calculus necessary for the study of analytic mechanics, he attends recitations and lectures on acoustics and optics, only such elementary mechanical principles being taught as are necessary to the understanding of those subjects. Near the end of the junior year the study of Bartlett's Analytic mechanics is commenced, and it is continued during the first term of the senior year. In the second term of the senior year the subject taught is spheric astronomy. The endeavor is made to show how the science has grown up, how its discoveries have been made, how it explains the phenomena of the heavens, to teach the general principles of the adjustment and use of instruments, and the methods of making and recording observations, and the application of astronomy to the uses of the surveyor and navigator.

In the mechanical course application is also made of the principles of mechanics, to the study of the forms and functions of the parts of engines, the theory of prime movers, and the construction, testing and management of engines,

The scope of the instruction in the classical course is less extended. All that is sought is to give a general idea of the principles of mechanics, acoustics, optics and astronomy, with very little mathematical analysis. Of the four hours per week allotted in the junior year to this department, generally about three are given to lectures and one to recitations.

#### POST-GRADUATE

The post-graduate course in civil engineering extends over a period of two years, and is open to students of special excellence in the scientific and mechanical courses. It embraces a thorough course in the principles of engineering construction, the strength of materials, the theory of roofs and bridges, the operations of surveying, the adjustment and use of instruments, topographical drawing and engineering, and the preparation of plans, specifications and estimates. The students are exercised in field-work, partly under the direction of the professor and partly in connection, as volunteer assistants, with engineering works which may be in progress in the vicinity.

#### Chemistry and physics

The instruction in chemistry is divided into an elementary and advanced grade.

The first is open to the students of the sophomore class and of the second year of the mechanical course. Two hours a week are spent in the laboratory. Text-book: Clowes' Practical chemistry, students being provided with all the necessary apparatus to perform the experiments described. Manipulation of the gases is succeeded by a complete course in qualitative analysis.

The advanced grade is for the students of the senior class and of the fourth year of the mechanical course. Three hours a week are given to the study, one lecture on general chemistry, and two hours in the laboratory. Bloxam's is used as a text-book of chemistry, while Clowes' Practical chemistry serves to complete the study of qualitative analysis. The laboratory instruction for the senior class follows a specially prepared synopsis, arranged by the instructors in the department. In addition to the problems in qualitative analysis and chemical physics, the advanced grade provides for instruction in the outlines of applied chemistry, and of volumetric and quantitative analysis.



The subjects of heat, light and electricity, and such other parts of physics as have a direct bearing on chemistry, are also taught in this department.

The students of the junior class and of the third year of the mechanical course listen to one lecture a week, and have one hour in the laboratory devoted to study of themes bearing either on the generation of the forces of nature or of those closely allied to the thorough comprehension of chemical physics.

Pyncheon's Chemical physics and Fiske's Electrical engineering are used as the text-books for the advanced grade.

### Natural history

As the object of the instruction in this department is to teach the students to observe carefully, to record accurately — to know the thing itself — the class-room work is made, as far as possible, practical.

The course is essentially a biological one. The general relations of the inorganic and organic worlds, the phenomena of life, and the structure and life-history of typical plants and animals are taught.

The freshman class is instructed in descriptive geometry. Book of reference: Woolf's Elements of descriptive geometry. The subject is carried through sections and intersections, tangency and development, and is applied to carpentry, machinery and architecture. Practice in tinting and in drawing from actual models of machinery is given from time to time. In the second term, the subjects pursued are shades and shadows and perspective. Shadows are determined in artificial and natural light; the principles of reflection are taught. Application is made occasionally to mechanical, architectural and artistic drawing.

In the sophomore year, the students draw from the cast, either ornaments or organic forms, according to individual ability.

The professor delivers to the senior class a series of lectures on esthetics, and the history of art and the several arts.

### The workshop

Connected with the college is a workshop in which instruction is given in mechanical manipulation and the elements of mechanical theory.

The course of study in the workshop extends over the whole four years of the mechanical course, and over such portion of this



time as may be found practicable for those students of the other courses who may elect it. For the complete course, the exercises and studies in the shop are as follows :

*First year* — Theory and use of metal-working tools ; properties of metals and modes of working and testing them.

*Second year* — Joining metals by riveting, soldering and brazing ; use of the speed-lathe ; study of the parts of the steam-engine from drawings, models, descriptions and examination of engine.

*Third year* — Use of the engine-lathe ; screw-cutting, boring, turning, facing ; measures of precision ; scraping, finishing and fitting.

*Fourth year* — Strength of materials ; proportioning of parts of engines ; managing and testing of engines.



## SOPHOMORE CLASS

CLASSICAL COURSE		Hours per Week	SCIENTIFIC COURSE		Hours per Week	MECHANICAL COURSE		Hours per Week
English language and literature		2	FIRST TERM			English literature		2
Rhetoric		2	English literature		2	Rhetoric		2
Logic		1	Rhetoric		1	French		2
Latin — Æneid, grammar, prose composition		2	French		2	German		3
Greek — Grammar and Anabasis, prose composition		3	German or Spanish — Iriarte's Fables		3	English history, Thompson		2
English history		2	English history		2	Spheric trigonometry, surveying and navigation		3
Chemistry		2	Spheric trigonometry, surveying and navigation		3	Mechanical drawing		3
Spheric trigonometry, surveying and navigation		3	Free hand drawing — Course of ornament		3	Chemistry		2
Free hand drawing — Course of ornament		2	Chemistry		2	Workshop and theory		2
Compositions and declamations		3	Compositions and declamations		4	Compositions and declamations		4
SECOND TERM			SECOND TERM			English literature		2
English literature		2	English literature		2	Rhetoric		2
Rhetoric		2	Rhetoric		2	French		3
Logic		1	Logic		1	German		3
Latin — Livy, grammar, prose composition		2	German or Spanish		3	English history		2
Greek — Grammar, prose composition, Xenophon's Memorabilia and Plato's Crito		3	English history		2	Analytic geometry		3
English history		2	Analytic geometry		3	Mechanical drawing		3
Chemistry		2	Drawing and study of the antique and figure		3	Chemistry		2
Analytic geometry		3	Chemistry		2	Workshop and theory		2
Drawing and study of the antique and figure		3	Compositions and declamations		4	Compositions and declamations		4

## JUNIOR CLASS

CLASSICAL COURSE			SCIENTIFIC COURSE			MECHANICAL COURSE		
Hours per Week			Hours per Week			Hours per Week		
<b>FIRST TERM</b>			<b>FIRST TERM</b>			<b>FIRST TERM</b>		
2	English language and literature, Poetry	2	English language and literature, poetry	2	English language and literature, Poetry	2	English language and literature, Poetry	2
4	Latin — Horace, Tacitus, Agricola and Germania, grammar, prose composition	5	German or Spanish — Don Quixote	5	German	5	German	5
3	Greek — Demosthenes' Orations	3	Political science	3	Political science	3	Political science	3
3	Political science	3	Differential and integral calculus	3	Differential and integral calculus	3	Differential and integral calculus	3
4	Mechanics and acoustics	2	Chemical physics	2	Chemical physics	2	Chemical physics	2
2	Chemical physics	1	History	1	History	1	History — Lectures	1
1	History	3	Acoustics, optics and heat	3	Acoustics, optics and heat	3	Acoustics, optics and heat	3
1	Anthropology, Zoology	1	Anthropology, Zoology	1	Anthropology, Zoology	1	Anthropology, Zoology	1
1	Original declamations	1	Original declamations	1	Original declamations	3	Workshop and theory	3
							Original declamations	
<b>SECOND TERM</b>			<b>SECOND TERM</b>			<b>SECOND TERM</b>		
2	English language and literature, Prose	2	English language and literature, Prose	2	English language and literature, Prose	2	English language and literature, Prose	2
4	Latin — Grammar and prose composition, Selections from Iliad or Odyssey,	5	German or Spanish	5	German	5	German	5
3	Greek — Cicero's Letters, Horace's Satires and Epistles, prose compositions	3	Political economy	3	Political economy	3	Political economy	3
3	Optics and astronomy	2	Differential and integral calculus	3	Differential and integral calculus	3	Differential and integral calculus	3
4	Political economy	2	Chemical physics	2	Chemical physics	2	Chemical physics	2
3	Chemical physics	1	History	1	History	1	History	1
2	History	3	Acoustics, optics and heat	3	Acoustics, optics and heat	3	Acoustics, optics and heat	3
1	Anthropology, Zoology	1	Anthropology, Zoology	1	Anthropology, Zoology	1	Anthropology, Zoology	1
1	Original declamations	1	Original declamations	1	Original declamations	3	Workshop and theory	3
							Original declamations	

In the junior year the students in the classical course have the option between mathematics (the calculus) and philosophy (law and economy).



## SENIOR CLASS

CLASSICAL COURSE		SCIENTIFIC COURSE		MECHANICAL COURSE	
Hours per week		Hours per week		Hours per week	
5	French or German or Spanish	5	Spanish or German or Latin	5	Theory of prime movers
3	Latin — Roman literature, grammar, Plautus	4	Psychology	4	Psychology
3	Greek — A play of Æschylus, Sophocles or Euripides	3	Pedagogics	3	Pedagogics
3	Selections from Herodotus and Thucydides	5	Chemistry	5	Chemistry
3	Greek literature, grammar	1	Mechanics and astronomy	1	Mechanics and astronomy
4	Chemistry	1	Geology, paleontology and mineralogy	1	Geology, paleontology and mineralogy
4	Psychology	1	Esthetics and the history of art	1	Esthetics and the history of art
1	Pedagogics	1	French or German	1	Workshop, drawing and theory
1	Geology, mineralogy, and paleontology		Original declamations	4	Original declamations
1	Esthetics and the history of art				
1	Original declamations				
SECOND TERM					
5	French or German or Spanish	5	Spanish or German or Latin	5	Theory of prime movers
3	Latin — Cicero's De natura deorum, Juvenal	4	History of philosophy, ethics	4	History of philosophy, ethics
3	Greek — A play of Aristophanes, Lectures on Greek language and literature	3	Chemistry	4	Chemistry
4	History of philosophy, ethics	5	Mechanics and astronomy	5	Mechanics and astronomy
3	Chemistry	1	Geology and paleontology, mineralogy	1	Geology and paleontology, mineralogy
1	Geology, mineralogy, paleontology	1	Esthetics and the history of art	1	Esthetics and the history of art
1	Esthetics and the history of art	1	French or German	1	Workshop, drawing and theory
1	Original declamations		Original declamations	4	Original declamations

In addition to the lectures and recitations indicated in the above schedule, there are exercises in oratory and declamation in the chapel every morning, when one senior, one junior and one sophomore speak before the whole college.

In the senior year the students of the scientific course may, at their option, have one lesson a week in French, or in the second modern language.

## REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts is conferred on those students who have completed the classical course; that of bachelor of sciences on those who have completed the scientific and mechanical courses.

The faculty recommends no student for a degree whose average standing in the studies of the senior year has fallen below six-tenths of the maximum. Every member of the graduating class is required to write a composition for oral delivery, to be sent in four weeks before commencement.

A bachelor of arts or of sciences may be recommended for the degree of master of arts or of sciences on the following conditions:

1 He shall, at the date of the commencement at which the degree is to be conferred, have been graduated at least three years.

2 He shall have been engaged for at least two years in the study of some literary or scientific subject, and shall furnish, as evidence of such study, either the diploma of the college or school which he has attended, or a detailed statement of the subjects and books which he has studied.

3 He shall present to the faculty, at least six weeks before the commencement, a thesis, satisfactory both in matter and style, on some subject connected with his studies, accompanied by a declaration that such thesis is his own work.

## BUILDINGS

Main building, five story brick, built 1847. Chapel, 850 seats. Class-room building, 1,250 seats. New history hall, 300 seats. Floor area of library, 4,059 sq. ft. Floor area of laboratory, 5,625 sq. ft. Total value of buildings \$100,000.

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## ST STEPHEN'S COLLEGE

*Annandale*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

1856 Rev. George F. Seymour, Annandale, received several young men preparing for entrance into General Theological Seminary.

Month Year

- 1858 Society for Promotion of Religion and Learning gave \$1,000 to aid six students.
- 1859 Diocesan Convocation received from John Bard 10 acres of land and an annual subscription of \$1,000. Training school and college resolved upon.
- 2 F 1860 Trustees resolved to raise \$30,000 for college building.
- 20 Mr " Incorporated by legislature.
- 11 Ap " Trustees organized.
- Jl 1861 College building commenced.

## TRUSTEES

Elected

- 1869 President, Rt. Rev. Henry C. Potter  
D. D., LL. D. . . . . New York
- 1860 Vice-President, Rev. John Ireland  
Tucker, D. D. . . . . Troy
- 1873 Treasurer, S. Van Rensselaer Cruger . . . . . New York
- 1890 Secretary, John V. L. Pruyn. . . . . Albany
- 1860 John Bard. . . . . Annandale
- 1863 Rev. R. B. Fairbairn, D. D., LL. D. . . . . "
- 1864 Stephen P. Nash, LL. D. . . . . New York
- 1866 Rt. Rev. A. N. Littlejohn, D. D., LL. D. . . . . Garden City
- 1869 Rt. Rev. Wm. Croswell Doane, D. D., LL. D. . . . . Albany
- 1874 Richard M. Harrison, B. A. . . . . Astoria
- 1876 Rev. Morgan Dix, D. D., D. C. L. . . . . New York
- 1876 Douglas Merritt, M. A. . . . .
- 1878 Rev. Joseph Carey, D. D. . . . . Saratoga
- 1878 Rev. Andrew Oliver, D. D. . . . . New York
- 1878 Cornelius Vanderbilt, M. A. . . . . "
- 1881 Rev. Charles F. Hoffman, D. D. . . . . "
- 1881 John Aspinwall, M. A. . . . . Barrytown
- 1884 Rev. J. Breckinridge Gibson, D. D. . . . . Sing Sing
- 1884 Archibald Rogers . . . . . Hyde Park
- 1885 Theodore K. Gibbs. . . . . New York
- 1886 Hon. Roswell P. Flower . . . . . "
- 1887 Rev. John W. Brown, D. D. . . . . "
- 1888 J. Hampden Robb. . . . . "
- 1889 Rev. William M. Jefferis, D. D. . . . . Philadelphia

## ADMINISTRATION

Figures in column at left give first year of service in St Stephen's.

1862 Warden, Rev. Robert B. Fairbairn, D. D., LL. D.

B. A. Trinity College 1840, M. A. 1843, D. D. 1864, St Stephen's 1874, Columbia 1887; LL. D. Delaware College 1876; Principal of Catskill Academy 1853-62; Professor of mathematics and natural philosophy, St Stephen's 1862-3; Warden of St Stephen's and professor of moral philosophy 1863-; Member American Institute of Christian Philosophy; Vice-president American Metrological Society; Honorary Fellow Society Science, Letters and Arts, London; Associate of Victoria Institute, Philosophical Society of Great Britain; Author Child of faith, 1858, College sermons, 1886, Doctrine of morality, 1887, and numerous pamphlets.

Treasurer, Col. S. V. R. Cruger, 187 Fulton st., New York.

1863 Secretary, Rev. George B. Hopson, B. A., D. D.

B. A. Trinity College 1857, M. A. 1860; M. A. St Stephen's 1874, D. D. 1886; Author The beneficiary education of young men for the sacred ministry, Essay on fasting communion.

Librarian, P. C. Pyle.

## INSTRUCTION

Figures in column at left give first year of service in St Stephen's and years spent in teaching.

1862 Rev. Robert B. Fairbairn, D. D., LL. D. Warden. Pro-  
37 fessor of Moral Philosophy and Acting Professor of Logic and Metaphysics.

See also "Administration."

1863 Rev. George B. Hopson, D. D. Professor of the Latin Lan-  
33 guage and Literature.

See also "Administration."

1871 Rev. William W. Olssen, B. A., D. D. Professor of Greek  
38 Language and Literature and of the Hebrew Language.

B. A. Columbia 1846, M. A. 1850, St Stephen's 1872; D. D. Columbia 1876; Professor of mathematics and natural philosophy, St Stephen's 1871-3; Professor of Greek language and literature and of Hebrew language 1873-; Author Personality, human and divine, 1882, Revelation universal and special, 1885.

1869 James Stryker, B. A., LL. D. Professor of Mathematics  
21 and Natural Philosophy.

B. A. St Stephen's 1869, M. A. 1872, LL. D. 1890; Tutor in Greek, St Stephen's 1869-72, Assistant professor of Greek, 1872-3, Professor of mathematics and natural philosophy 1873-.



1882 John Aspinwall, M. A. Lecturer on Chemistry.

5 M. A. (honorary) St Stephen's 1889.

1890 M. B. Nash, B. A. Tutor, Annandale.

3 B. A. Griswold College 1887; Instructor in classics, Griswold College 1887-9; Instructor, Sewell Academy 1889-90.

1889 Rev. C. Ellis Stevens, LL. D., D. C. L. Lecturer on Constitutional Law, 214 Berkley pl., Brooklyn.

M. A. University of Wooster, Berkley Divinity School 1875; B. D. Nashotah Theological Seminary 1885; Ph. D. (cum laude) University of Wooster 1885, LL. D. 1888; D. C. L. King's College, Canada 1888; Lecturer on English and American constitutional law, University of Wooster 1888; F. S. A., Edinburgh; F. R. G. S., London; Associate Editor of the Living church; Member American Geographical Society, American Ethnological Society.

#### VACANCIES

? 3 Herman A. Bailey, B. A., M. D. Assistant professor of Greek. Resigned.

? 5 Herbert M. Clarke, B. A., Ph. D. Assistant professor of Greek. Resigned.

1 George K. MacNaught, B. A., Tutor.

#### APPOINTED DURING YEAR

Rev. C. Ellis Stevens, LL. D., D. C. L. Lecturer on constitutional law. Appointed O 1889.

M. B. Nash, B. A. Tutor. Appointed My 1890.

Herman A. Bailey, B. A., M. D. Assistant professor of Greek.

George K. MacNaught, B. A. Tutor.

#### HONORARY DEGREES

D. D.—Rt. Rev. Courtland Whitehead, D. D. . . . Pittsburgh, Pa.

Rev. Frederick B. Van Kleeck, M. A. . . . White Plains

Rev. Alex. H. Vinton, B. A., B. D. . . . Worcester, Mass.

#### COLLEGE APPOINTMENTS

Valedictory, William George Walter Anthony . . . Annandale

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Latin, First A. H. Grant, jr., Hobart .....	\$12
Second F. M. W. Schneeweiss, New Brunswick, N. J. . .	12
Greek, First A. H. Grant, jr., Hobart .....	12
Second F. M. W. Schneeweiss, New Brunswick, N. J. . .	12
Third W. A. Robertson, Brooklyn .....	12
Mathematics A. H. Grant, jr., Hobart .....	12
Natural philosophy and astronomy, Ira J. Greenwood Hoosick Falls .....	12
Moral philosophy D. R. Judd, Poughkeepsie .....	12
Psychology W. G. N. Anthony, Annandale .....	12
Hebrew W. H. Meldrum, Brewster .....	12
Greek of New Testament W. H. Meldrum, Brewster .....	12
Logic E. E. Madeira, Annandale .....	12
Elocution W. G. N. Anthony, Annandale .....	40

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

The course of instruction is one which is required for a bachelor's degree. There are no elective duties. The course is principally classical and philosophical. It is such as is required of those who are to enter on the study of theology. It consists of Latin and Greek, with French, rhetoric, logic, the philosophy of the mind and of the moral nature, and English literature. There is also the ordinary course in mathematics and physics, with lectures on scientific subjects.

FRESHMAN CLASS	SOPHOMORE CLASS	JUNIOR CLASS	SENIOR CLASS
<p>Cicero's De senectute and De amicitia</p> <p>Homer's Odyssey, three books</p> <p>Lectures on early Greek literature</p> <p>Greek Testament — St Matthew</p> <p>Algebra</p> <p>Rhetoric</p>	<p>CHRISTMAS TERM</p> <p>Xenophon's Memorabilia, two books</p> <p>Greek Testament — St Luke</p> <p>Navigation and spherical trigonometry</p> <p>Rhetoric</p> <p>French — Otto's grammar and reader</p>	<p>JUNIOR CLASS</p> <p>Juvenal</p> <p>Kame's Elements of criticism</p> <p>Sophocles or Eschylus, one drama</p> <p>Greek Testament — Epistles of St Paul</p> <p>Lectures on Greek language and literature</p> <p>Natural philosophy</p> <p>Brockelsby's Meteorology</p> <p>French — Bocher's series of plays</p>	<p>SENIOR CLASS</p> <p>Aristotle's Ethics, books 1 and 2, or Plato's Republic, two books</p> <p>Greek Testament — Acts</p> <p>Cicero — De officiis, Exercises in writing Latin letters, etc</p> <p>Mental philosophy</p> <p>English literature</p>
<p>Latin composition</p> <p>Homer's Odyssey, three books</p> <p>Lectures on Greek epic poetry</p> <p>Greek Testament — St Matthew</p> <p>Algebra</p> <p>Solid geometry</p> <p>Rhetoric</p>	<p>EASTER TERM</p> <p>Horace's Satires and epistles</p> <p>Euripides, one drama</p> <p>Greek Testament — St Luke</p> <p>Harrison on the English language</p> <p>Craik's History of the English language</p> <p>Co-ordinate geometry</p> <p>French, continued</p>	<p>Logic</p> <p>Juvenal, concluded</p> <p>Sophocles or Eschylus, continued</p> <p>Natural philosophy</p> <p>March's Origin and history of the English language</p> <p>French, continued</p>	<p>Greek Testament — Acts</p> <p>Lectures on Hellenistic Greek</p> <p>Bible history and geography</p> <p>History of metaphysical philosophy</p> <p>Ethics</p> <p>History of ethical philosophy</p> <p>Lectures on chemistry, geology, and physical geography</p> <p>Political economy</p>
<p>Horace's Odes and epodes</p> <p>Xenophon's Symposium, or Philipics of Demosthenes</p> <p>Greek Testament — St Matthew</p> <p>Plane trigonometry</p> <p>Rhetoric</p>	<p>TRINITY TERM</p> <p>Euripides, continued</p> <p>Lectures on Greek drama and dramatic poets</p> <p>Greek Testament — St Luke</p> <p>Mensuration and surveying</p> <p>Jones's Latin prose composition</p> <p>Smith's synonyms</p> <p>French, continued</p>	<p>Tacitus' Agricola</p> <p>Plato's Apology and Crito</p> <p>Loomis' Astronomy</p> <p>English history</p> <p>French, continued</p>	<p>Hebrew</p> <p>Butler's Ethical discourses</p> <p>Yonman's Chemistry</p> <p>Lectures on English literature</p> <p>History of the United States, or Guizot's History of civilization</p>
<p>Throughout the year there will be exercises in Latin prose composition, Greek prose composition; recitations in Roman and Greek antiquities, Smith's History of Rome and Smith's History of Greece; reading, declamation, and composition</p>	<p>Exercises throughout the year in writing Latin and Greek; Reading, declamation and composition</p>	<p>Five original declamations</p> <p>Five English compositions</p> <p>Exercises in reading</p>	<p>Five original declamations</p> <p>Five English compositions</p> <p>Exercises in reading</p>

### Preparatory course of candidates for orders

An opportunity is afforded, to those who do not intend to pursue the regular course of study for a degree, but who wish to become candidates for orders, of reciting with such classes as will prepare them for an examination on the subjects prescribed by the canons of the church. Such a course will require two or three years, according to the previous preparation of the student. Those who satisfactorily sustain the examination will be furnished with a certificate to that effect. The examination, according to the canon, will embrace the following subjects :

#### *First year*

Latin reader and four books of Cæsar  
Greek lessons and one book of Anabasis  
Rhetoric

#### *Second year*

Virgil, six books of Æneid, and Eclogues  
Sallust, and four orations of Cicero  
Second and third books of Anabasis  
Three books of the Iliad  
History of England  
Logic  
Kames' Elements of criticism

#### *Third year*

Cicero's De senectute and De amicitia  
Homer's Odyssey ; six books  
Xenophon's Symposium or Philippias of Demosthenes  
Intellectual philosophy  
Moral philosophy  
English literature  
Greek Testament  
Hebrew

### REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts is conferred on those students who complete the course with an average of at least 75 in the required examinations.

The degree of master of arts may be conferred on those bachelors of arts of three years' standing who shall have performed satisfactorily such literary exercises as may be assigned them by the faculty.



Chapel, one story stone, built 1860, floor area 4,042 sq. ft., value \$34,000. Dormitory, four story brick, built 1861, floor area 14,660 sq. ft., two class rooms, 40 seats, value \$16,000. Second dormitory building, two story wood, built 1868, floor area 6,194 sq. ft., three class rooms, 60 seats, value \$4,200. Third dormitory building, four story stone, built 1884, floor area 10,048 sq. ft., value \$3,217.09. Library, one story wood, built 1854, floor area 1,457 sq. ft., one class room, 20 seats, value \$5,000. Observatory, one story brick, built 1878, floor area 115 sq. ft., value \$250. Gymnasium, value \$1,000. Janitor's house, two story wood. President's house, four story stone, built 1869, floor area 10,156 sq. ft., value \$54,000. Dining hall, one story brick, built 1873, floor area 1,800 sq. ft., value \$4,500. Ten pin alley, one story wood, built 1862, floor area 1,012 sq. ft., value \$300. Barn, two story wood, built 1873, floor area 356 sq. ft., value \$500. Ice house, one story wood, built 1872, floor area 871 sq. ft., value \$850.

39 W. 15 st., New York

For list of date abbreviations see p. 254.

Month	Year	
25 N	1850	Opened for instruction.
10 Ja	1861	Regents granted provisional charter.
2 D	1862	Charter declared absolute. By agreement perpetual Society of Jesus agrees to furnish suitable professors and tutors without salary or pay beyond support. Conducted as a day school.
7 Ap	1870	Charter amended. College may hold property yielding income not exceeding \$75,000 per annum.

## Elected

1882	President, Rev. David A. Merrick, S. J. . . . .	New York
1887	Treasurer, Rev. Neil N. McKinnon, S. J. . . . .	"
1879	Secretary, Rev. Charles J. O'Connor, S. J., . . . . .	"
1882	Rev. Isidore Daubresse, S. J. . . . .	"

## Elected

1883	Very Rev. Thomas J. Campbell, S. J . . . .	New York
1883	Rev. William Moylan, S. J . . . . .	"
1885	Rev. Herman C. Denny, S. J . . . . .	"
1886	Rev. John B. Young, S. J . . . . .	"
1887	Rev. Raphael Gelinas, S. J . . . . .	"
1889	Rev. James B. Becker, S. J . . . . .	"
1889	Rev. Patrick O'Reilly, S. J . . . . .	Worcester, Mass.
1889	Rev. Richard J. Whyte, S. J . . . . .	New York

## ADMINISTRATION

Figures in column at left give first year of service in College of St Francis Xavier.

1888	President, Rev. David A. Merrick, S. J.
1888	Vice-President and Secretary, Rev. James B. Becker, S. J. 39 W. 15 st.

Professor of Latin and Greek, Boston College 1872-4; Professor of Latin and Greek, Holy Cross College 1874-7; Professor of mathematics in various other colleges of the New York Maryland province of the Society of Jesus 1881-3, 1884-9.

Treasurer, Rev. Neil N. McKinnon.

1890	Librarian, Rev. John F. X. O'Connor, S. J.
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## INSTRUCTION

All the teachers of the college after becoming members of Society of Jesus devoted two years to the study of rhetoric, three years to the study of philosophy and the sciences, and the Rev. professors four more years to the study of theology, in colleges of the society at which no degrees are given.

Figures in column at left give first year of service in College of St Francis Xavier and years spent in teaching.

1888	Rev. James B. Becker, S. J.	Vice-President, 39 W. 15 st. 12
		See also "Administration."
1890	Rev. William O'B. Pardow, S. J.	Professor of Mental ?3 Philosophy.
1890	Rev. John G. Fox, S. J.	Professor of Chemistry and 14 Mathematics.
1888	James J. Deck, S. J.	Professor of Mechanics and Director 3 of Music.
1890	Rev. John F. X. O'Connor, S. J.	Professor of Rhetoric. ?6
1887	Joseph H. Rockwell, S. J.	Professor of Belles-Lettres and 3 Algebra.

- 1888 John J. O'Hara, S. J. Professor of Classics and Mathematics. Director of St Francis Xavier Debating Society.  
2
- 1890 Patrick Casey, S. J. Professor of First Grammar Class, Arithmetic and Elocution. Director of Junior Debating Society.  
4
- 1888 Edward M. Corbett, S. J. Professor of Second Grammar Class, First Section and Algebra.  
3
- 1888 Henry A. Judge, S. J. Professor of Second Grammar Class, Second Section and Arithmetic.  
4
- 1886 Edmund J. Burke, S. J. Professor of Third Grammar Class, First Section, Arithmetic and French.  
4
- 1889 Francis G. Russell, S. J. Professor of Third Grammar, Second Section and Algebra.  
1
- 1890 Michael Mahony, S. J. Professor of Third Grammar Class, Third Section and Arithmetic.  
Educated at University of Dublin.
- 1889 Michael R. McCarthy, S. J. Professor of Arithmetic.  
1

## VACANCIES

William A. Boylan, B. A. (College of St Francis Xavier). Professor of arithmetic. End of term 31 Jl 1890.

James T. Casey, S. J. Professor of philosophy. Removed 31 Jl 1890.

Cornelius J. Clifford, S. J. Professor of rhetoric. End of term 31 Jl 1890.

Patrick J. Cormican, S. J. Professor of classics and geometry and librarian. End of term 31 Jl 1890.

Rev. Thomas J. A. Freeman, S. J. Professor of physics and chemistry. End of term 31 Jl 1890.

## APPOINTED DURING YEAR

Patrick Casey, S. J. Professor of arithmetic and elocution. Elected Jl 1890.

Rev. John G. Fox, S. J. Professor of chemistry and mathematics. Elected Jl 1890.

Michael Mahoney, S. J. Professor of arithmetic. Elected Jl 1890.

Rev. John F. X. O'Connor, S. J. Professor of rhetoric. Elected Jl 1890.

Rev. William O'B. Pardow, S. J. Professor of mental philosophy. Elected Jl 1890.

## HONORARY DEGREES

M. A.—Joseph L. Keane, B. A. .... New York

## COLLEGE APPOINTMENTS

(None)

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

		Value
Gold medal for evidences of religion, Edward J. Terney ..		\$50
“ “ mental philosophy, Francis X. Hennessy ..		50
“ “ natural sciences, James I. Moakley .....		50
“ “ applied mathematics, James I. Moakley ...		50
“ “ paper on proofs of existence of God, Francis		
X. Hennessy .....		50
“ “ elocution, Thomas F. Burke .....		50
“ “ class standing, Hugh Quinn .....		50
Thomas F. Burke .....		...
Francis R. Stark .....		...
“ “ Christian doctrine, James P. Glynn .....		50

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## College course

The regular course, which leads to the degree of bachelor of arts, comprises four classes, called philosophy, rhetoric, belles-lettres and classics. It embraces the study of logic, metaphysics and theodicy; the English, Latin and Greek languages; rhetoric, poetry and elocution; mathematics and the natural sciences; history, geography and mythology. French and German are elective studies.

In the class of philosophy, Latin is the language generally used by the professor in his lectures, as well as by the students in their recitations; the text-book is also in Latin.

Besides the collegiate course, there are four departments, viz., the post-graduate, grammar, commercial and preparatory.



## STUDY OF ENGLISH

One of the principal objects ever kept in view in reading the Latin and Greek classics is to make use of them as an invaluable aid to the study of English. The student, therefore, having once shown by an exact literal translation that he fully understands the author, is required to express in pure idiomatic and elegant English the very shade of meaning conveyed by the text. The plays of Shakspeare, the works of other poets, American and British, and the master-pieces of American and British orators and prose writers, are made the subject of critical study and analysis. An English essay, narration, description, or other composition, in prose or verse, is written by every student once a week.

## MATHEMATICS

Four or five hours a week are devoted to mathematics, besides an additional hour every month for review-papers. In the arithmetic and algebra classes, the special matter of the previous year is always repeated before the student is allowed to advance.

The classes in the mathematical course are arranged so as to correspond, as nearly as can be, with those of the classical course. In this way both courses end together in rhetoric, and proficiency in both is required for entering philosophy.

## SCIENCE DEPARTMENT

The physical sciences are taught, not so much to furnish interesting information, as to aid in the complete training of the mind by offering some insight into the formation, the elements, and the forces of the visible world about us. They are accordingly kept for the last two years, when the student is able to bring to the study of them a more mature judgment and a less divided attention. Chemistry is begun in rhetoric, and the student, before entering philosophy, must pass a successful examination in general chemistry. The philosophers are present daily at lectures on physics, embracing complete treatises on sound, heat, light and electricity, and go through experimental work in qualitative chemical analysis. Lectures on applied mechanics, geology and astronomy are also given.

## CLASSICS (FRESHMAN CLASS)

English — Composition, Study of Shakspeare; Merchant of Venice  
 Latin — Grammar, composition; Cicero's In Catilinam; Sallust's Catilina,  
 Jugurtha; Virgil's Georgics, Æneid  
 Greek — Grammar; Homer's Iliad; Xenophon's Cyropædia  
 Mathematics  
 Elocution  
 Ancient and modern history  
 Religious instruction

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## RHETORIC (JUNIOR CLASS)

English — Lectures; Composition; Study of American and British ora-  
 tors; Shakspeare's Julius Cæsar  
 Latin — Cicero's Pro Milone, Pro lege Manilla, etc.; Horace; Juvenal's  
 Satires; Martial's Epigrams (selected); Tacitus; Agricola; Germania;  
 Greek — Demosthenes' On the crown; Sophocles' Oedipus Rex; Æschylus'  
 Prometheus bound  
 Mathematics  
 Chemistry  
 Geology  
 Elocution  
 History — Lectures: modern European society  
 Religious instruction — Lectures

## BELLES-LETTRES (SOPHOMORE CLASS)

English — Lectures; composition; Study of American and British poets;  
 Shakspeare's Macbeth  
 Latin — Composition; Cicero's Pro Marcello, Pro Archia, In M. Antonium;  
 Livy; Virgil's Æneid; Horace's Odes, Ars poetica  
 Greek — Demosthenes' Olynthiacs, Philippics; Iliad; Euripides' Hecula;  
 Thucydides; Plato's Crito  
 Mathematics  
 Chemistry  
 Elocution  
 Ancient and modern history  
 Religious instruction

## PHILOSOPHY (SENIOR CLASS)

Logic, metaphysics, theology; Lectures in Latin; Theses  
 Mathematics — See page —  
 Natural philosophy — Lectures  
 Analytic chemistry  
 Geology  
 Elocution  
 History — modern European society  
 Religious instruction — Lectures

### Business training

Instead of adopting a special commercial drill, the college secures the most thorough instruction in all the branches of mathematics, together with solid classical training, without at the same time allowing want of success in the one to interfere with advancement in the other.

### Post-graduate class

Moral philosophy

Sociology, natural and international law

Dissertations on the subjects treated in the lectures

Elementa philosophiæ moralis. Jouin, S. J.

### Mathematical course

#### 1 CALCULUS CLASS

Differential and integral calculus

Application to analytic statics and dynamics of a particle

Lectures based on the works of Todhunter, Taite and Steele

#### 2 APPLIED MATHEMATICS

Statics, dynamics, hydrostatics, optics and astronomy

Mechanics. Peck

Lectures based on the works of Parkinson, Goodwin and Godfrey

#### 3 TRIGONOMETRY CLASS

Logarithms. Plane trigonometry

Conic sections referred to rectangular co-ordinates

Trigonometry. Wentworth

#### 4 GEOMETRY CLASS

Wentworth's Geometry

### Elective studies

French — Keetel's Grammar; Fénelon's Fables

German — Collar's Eysenbach's Grammar

### REQUIREMENTS FOR GRADUATION

Graduates of the regular course receive the degree of bachelor of arts. If a student should be only partially successful he might receive the degree of bachelor of science or of philosophy as the case might require.

To obtain the degree of master of arts the student after receiving the degree of bachelor of arts must attend the post-graduate class and pass two successful examinations in ethics and sociology. He must also write three dissertations on the subject-matter of the year.

### BUILDINGS

Main building, four story brick and stone, built 1849, floor area 29,760 sq. ft., 14 class rooms, about 500 seats, value about \$60,000. Three other buildings, one four story brick and stone built 1888, value about \$140,000.

## MANHATTAN COLLEGE

*New York*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1853	Organized and founded by brothers of the Christian schools.
2 Ap	1863	Regents granted charter. College owned and conducted by brothers of the Christian schools.
	1870	Alumni Association formed.

### TRUSTEES

Elected	
1879	<sup>1</sup> Chairman (pro tem), Stephen McMahon, F. S. C., New York
1886	Treasurer, Roderick W. Kane, F. S. C. .... " "
1877	<sup>1</sup> Secretary, Francis M. Barat, F. S. C. .... " "
1867	Joseph Brennan, F. S. C. .... " "
1870	William H. Byrnes, F. S. C. .... " "
1873	Edmund F. Murphy, F. S. C. .... " "
1877	Patrick Coffey, F. S. C. .... " "
1877	<sup>1</sup> Edward C. Donnelly .... " "
1877	Æneas Farren, F. S. C. .... " "
1882	Patrick Dugan, F. S. C. .... Utica
1883	Thomas Golden, F. S. C. .... " "
1885	Michael F. O'Neill, F. S. C. .... Buffalo
1885	John J. Reardon, F. S. C. .... New York
1887	James Sadlier, Jr. .... " "

<sup>1</sup>Re-elected.



Elected

1889	George Hahn, F. S. C.....	New York
1890	<sup>1</sup> Hugh J. Carney, F. S. C.....	"
1890	<sup>1</sup> Peter Muth, F. S. C.....	"

## VACANCIES

Henry L. Hoguet, New York, died 9 My 1890

## ADMINISTRATION

First year of service in Manhattan not reported.

President, Rev. Brother Justin.

Vice-President and Sub-director, Rev. Brother Isaac John.

Director, Rev. Brother Thomas.

Treasurer, Roderick W. Kane, F. S. C.

Secretary, Rev. Brother John Chrysostom.

Librarian, Rev. Brother Chrysostom.

Chaplain, Rev. Thomas M. Grennan.

## INSTRUCTION

First year of service in Manhattan and years spent in teaching not reported.

Rev. Brother Justin. President and Lecturer on Evidences of Religion.

Rev. Brother Isaac John. Prefect of Studies and Professor of Mathematics.

Rev. Brother Blimond. Professor of Latin, Greek and Modern Languages.

C. M. O'Leary, M. D., LL. D. Professor of Latin, Greek and Zoology.

Rev. Brother Chrysostom. Professor of Moral Philosophy and Metaphysics.

Col. Thomas F. Galwey, M. A. Professor of Philosophy of History and Political Economy.

Rev. Brother Adjutor. Professor of Astronomy and Chemistry.

Edward F. Fagan, M. A., Ph. D. Professor of Mathematics and Classics.

Rev. Brother Gordian. Professor of Literature and Oratory.

Rev. Brother Patrick. Professor of Greek, Rhetoric and English Literature.

Rev. Brother Charles. Associate Professor of Latin and English.

- Rev. Brother Denis. Professor of French and Drawing.  
 Rev. Brother John Chrysostom. Professor of Elocution.  
 Rev. Brother Eliphus. Professor of the Science of Accounts,  
 Phonography, etc.  
 Rev. Brother Joseph. Associate Professor of Book-keeping and  
 Commercial law.  
 Rev. Brother Albert. Associate Professor of Rhetoric and  
 Literature.  
 Rev. Brother Maurice. Tutor in Mathematics and English.  
 Rev. Brother Maureatius. Assistant Teacher of Latin, Greek and  
 German.  
 Rev. Brother George. Tutor in English Composition and History.  
 Rev. Brother Francis. Assistant Teacher of Drawing.  
 Rev. Brother Jasper. Prefect of Studies.  
 Rev. Brother John. Prefect of Studies.

## VACANCIES

- Rev. Brother Justin, F. S. C. President. Resigned 1 Jl 1890, did  
 not take effect till after 1 Ag.

## HONORARY DEGREES

- Ph. D.—Michael Walsh, LL. D. . . . . New York  
 M. A.—William F. Donovan, B. A., M. D. . . . . “  
       Henry L. Garland, B. A., LL. B. . . . . New Orleans  
       Arthur J. O’Leary, B. A., M. D. . . . . New York  
       Denis Quinn, B. A., LL. B. . . . . “

## COLLEGE APPOINTMENTS

- Valedictory, Francis M. Madden . . . . . Rondout  
 Salutatory, Francis E. Lavelle . . . . . New York  
 English oration, Joseph P. Donahue . . . . . “  
 Philosophical oration, Denis Quinn, LL. B., M. A. . . . . “  
 Historical oration, John J. Prial . . . . . Florida, N.Y.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

- |   |       |
|---|-------|
|   | Value |
| Alumni purse for best English essay, Edward A. Martin,<br>Tarrytown . . . . .         | \$50  |
| Milmo McGowan medal for religious instruction, Ambrose M.<br>Dwyer, St Paul . . . . . | 25    |

	Value
Kelly medal for philosophy, Edward A. Martin, Tarrytown..	25
Grady memorial medal for oratory, Jas. P. Keenan, Brooklyn.	25
Develin medal for classics, Augustine F. Maher, New Haven.	25
Hoguet medal for mathematics, John J. Fitzgerald, Brooklyn.	25
Lavelle medal for Latin composition, Daniel A. Quinn, New York .....	25

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## CLASSICAL-SCIENTIFIC COURSE

FRESHMAN CLASS	SOPHOMORE CLASS	JUNIOR CLASS	SENIOR CLASS
<p>Ancient history Rhetoric and composition English classics Elocution Latin composition and prosody Caesar, Sallust, Virgil Greek grammar and composition Xenophon, Lucian Algebra Geometry Physics Linear drawing Religious instruction</p>	<p>English and American literature Ancient and modern history Philosophy of style and composition English classics Elocution Latin composition Virgil, Cicero, Livy Church hymns Greek composition and prosody Lucian, Thucydides, Pindar Analytic geometry Trigonometry Mechanical and architectural drawing Chemistry Astronomy Religious instruction</p>	<p>Religious instruction Logic Geology Criteriology Modern history General literature Oratorical composition English classics Elocution Latin composition Horace, Cicero, Quintilian Greek composition Homer, Herodotus, Plato Greek Testament Analytic geometry Calculus Mechanical, architectural and topographical drawing French German Practical physics Blow-pipe analysis Mineralogy Geology</p>	<p>Religious instruction Metaphysics Psychology Theodicy Philosophy of history Philosophy of literature Political economy Civil government Essays Elocution Latin composition Tacitus, Cicero, Perseus, Plautus Greek composition Demosthenes, Aeschylus, Plato Greek Testament Differential calculus Mechanical, architectural and topographical drawing French German Qualitative and quantitative analysis Natural sciences</p>



**Bureau of commerce**

## ADVANCED BUSINESS COURSE

Religious instruction, English rhetoric and composition, Elocution, Commercial correspondence, Business forms.

Arithmetic and mensuration, Practical business operations, Book-keeping, Banking, Lectures on commodities and commercial law.

Phonography, Typewriting, Penmanship, French and German.

## BUSINESS CLASS

This class is organized with a view of preparing for the bureau of commerce students who may be deficient in some one or other of the necessary qualifications.

**REQUIREMENTS FOR GRADUATION**

No degree or other testimonial will be conferred on any student unless the prescribed course of study shall have been completed, and satisfactory evidence of proficiency in the various subjects shall have been given.

The degree of bachelor of arts is conferred on students who finish the classical course.

The degree of bachelor of science is conferred on students who finish the scientific course.

The degree of master of arts is conferred on those who, having obtained the degree of bachelor of arts, have subsequently devoted at least two years to further literary or professional study.

The degree of master of science is conferred on those who, having obtained the degree of bachelor of science, have subsequently devoted at least two years to further scientific pursuits.

A diploma is granted to those who finish the business course, as a guarantee of fitness to engage in mercantile pursuits.

**BUILDINGS**

Main building, five story brick, built 1854, floor area 51,270 sq. ft., value \$100,000. Included in this building are the following: 11 dormitory rooms, floor area 16,567 sq. ft.; 12 class rooms, floor area 14,608 sq. ft., 401 seats; four art and music rooms, one story, built 1861, floor area 1,608 sq. ft.; library, built 1867,

floor area 2,050 sq. ft.; laboratory 625 sq. ft., one class room, 30 seats; museum, floor area 2,350 sq. ft.; two gymnasium rooms, floor area 1,399 sq. ft. Gymnasium pavilion, one story wood, built 1889, floor area 480 sq. ft. Parlors and office, one story brick, built 1872, floor area 1,420 sq. ft., 24 seats. Refectories, one story brick, built 1861, floor area 4,188 sq. ft., 260 seats. Kitchen, bath rooms, etc., floor area 5,975 sq. ft., 20 seats.

## ST JOSEPH S COLLEGE

*3 Delaware av., Buffalo*

### HISTORIC SKETCH

Incorporated with Manhattan College.

### TRUSTEES

Same as for Manhattan College. See page 749.

### ADMINISTRATION

Figures in column at left give first year of service in St Joseph's.

- 1887 Director, Rev. Brother Aelred, F. S. C.
- 1888 Treasurer, Rev. Brother Benedict, F. S. C.
- 1890 Secretary, Rev. Brother Cantidius, F. S. C.

### INSTRUCTION

Figures in column at left give first year of service in St Joseph's and years spent in teaching.

- 1887 Rev. Brother Aelred, F. S. C. Diréctor and Teacher of  
19 Mathematics and Rhetoric.
- 1890 Rev. Brother Cantidius, F. S. C. Teacher of Natural Sciences  
15 Literature and Elocution.
- 1888 Rev. Brother Amator, F. S. C. Teacher of Phonography and  
25 Book-keeping.
- 1890 Rev. Brother Bertin, F. S. C. Teacher of Algebra and  
9 Geometry.
- 1890 Rev. Brother Anesius, F. S. C. Teacher of History and  
5 Geography.
- 1888 Rev. Brother Paulian, F. S. C. Teacher of Drawing and  
8 Penmanship.

- 1888 Rev. Brother Benedict, F. S. C. Teacher of German.  
 1887 Rev. Brother James, F. S. C. Teacher of Vocal Music.  
 15  
 1888 James J. Gallagher, Ph. D. Teacher of Classics.  
 13  
 1887 Carl H. Techendorf. Teacher of Instrumental music.  
 12

## APPOINTED DURING YEAR

- Rev. Brother Cantidius, F. S. C. Secretary and Teacher of natural sciences, literature and elocution.  
 Rev. Brother Bertin, F. S. C. Teacher of algebra and geometry.  
 Rev. Brother Anesius, F. S. C. Teacher of history and geography.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

- |  |           |
|--|-----------|
| Valedictory, John J. Donovan.....            | Charlotte |
| English oration, John F. Koine.....          | Buffalo   |
| Historical oration, Arthur J. Wallaher ..... | Buffalo   |

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

- |   |       |
|---|-------|
|   | Value |
| Ryan gold medal for oratory, John F. Koine .....          | \$25  |
| Manhattan gold medal for elocution, Arthur J. Keefe ..... | 15    |

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## CLASSICAL DEPARTMENT

A full course of rhetoric, English, literature, history and elocution; Latin, Greek, German and French languages; Logic, metaphysics and ethics; Evidences of religion; Mathematics, physiology, physics, chemistry.

## SCIENTIFIC DEPARTMENT

In this department the students pursue the study of philosophy and of the English language and literature, as in the classical department. They pay special attention to the higher mathematics and the natural sciences. Facilities are afforded them for practical work in the laboratory.

## COMMERCIAL DEPARTMENT

Evidences of religion, penmanship, arithmetic, geometry, linear drawing, history, English grammar, composition, elocution, geography, commercial correspondence, book-keeping, commercial law, German, phonography, type-writing, telegraphy, etc.

## REQUIREMENTS FOR GRADUATION

Students who complete the classical course receive the degree of bachelor of arts; those who complete the scientific course, the degree of bachelor of science. A commercial diploma is granted at the close of the commercial course.

## BUILDINGS

Main building, five story brick, built 1872, total floor area 24,500 sq. ft., value \$80,000. Included in this building are the following: dormitory, three rooms, 4,828 sq. ft.; nine class rooms, 264 seats; 4,968 sq. ft.; music room, 1,656 sq. ft.; library, 830 sq. ft.; laboratory, 480 sq. ft.; gymnasium, 670 sq. ft.; parlors, 1,180 sq. ft.; refectories and kitchen, 1,660 sq. ft.

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## POLYTECHNIC INSTITUTE OF BROOKLYN

*Livingston st., Brooklyn*

*Consists of both collegiate and academic departments, but first separate report will be made next year. The facts relating more particularly to collegiate department are here given; those for academic department are given under academies. All statistics are given in the academy table.*

## HISTORIC SKETCH

Month Year

For list of date abbreviations see p. 254.

- 7 Ap 1854 Regents granted provisional charter to Brooklyn Collegiate and Polytechnic Institute.
- S 1855 Institute opened.
- 10 Mr 1857 Legislature authorized institute to increase capital stock to not over \$100,000 and to enjoy all rights of an academy.
- 1869 Power to confer B. A. and B. S. granted.
- 8 Ag 1889 Regents granted provisional charter to Polytechnic Institute of Brooklyn.



Month Year

- 8 S 1889 New corporation acquired lands, buildings and equipment of Brooklyn Collegiate and Polytechnic Institute and assumed educational work of latter, which had meanwhile surrendered charter.
- 30 Ja 1890 Regents granted absolute charter to Polytechnic Institute of Brooklyn.

## TRUSTEES

Elected

1889	Chairman, Wm. Augustus White . . . .	158 Columbia Heights
1889	Treasurer, Benj. T. Frothingham . . . .	188 Columbia Heights
1889	Secretary, Henry S. Snow . . . . .	55 Pineapple st.
1889	Charles S. Baylis . . . . .	74 Broad st., N. Y.
1889	Latham A. Fish . . . . .	121 Joralemon st.
1889	Isaac H. Frothingham . . . . .	134 Remsen st.
1889	W. T. Hatch . . . . .	124 Remsen st.
1889	George A. Jarvis . . . . .	491 Henry st.
1889	Josiah O. Low . . . . .	36 Remsen st.
1889	Frank B. Martin . . . . .	28 Pierrepont st.
1889	John T. Martin . . . . .	28 Pierrepont st.
1889	J. Rogers Maxwell . . . . .	66 Eighth av.
1889	Daniel W. McWilliams . . . . .	39 S. Portland av.
1889	Thomas S. Moore . . . . .	102 Broadway, N. Y.
1889	Joseph H. Raymond . . . . .	173 Joralemon st.
1889	J. S. T. Stranahan . . . . .	269 Union st.
1889	Alexander M. White . . . . .	2 Pierrepont st.
1889	Stephen V. White . . . . .	210 Columbia Heights
1890	William H. Nichols . . . . .	353 Clinton av.
1890	Elihu Spicer . . . . .	7 S. Oxford st.

## ADMINISTRATION

Figures in column at left give first year of service in Polytechnic Institute of Brooklyn.

1864 President, David H. Cochran, Ph.D., LL.D., 171 Schermerhorn st.

Educated at Hamilton College.

1856 Superintendent, Robert Foster, M. A., Ph. D., 290 Adelphi st.

Educated at Princeton.

1855 Principal of Academic Department, Edward C. Seymour, M. A., 72 S. Elliott pl.

Educated at University of Rochester.

1863 Secretary, Rufus Sheldon, M. A., 20 S. Elliott pl.

Educated at University of Rochester.

Registrar and Clerk, Robert L. Massonneau, jr, 94 Seventh av.

Janitor, Charles H. Hankinson, Institute Building.

## INSTRUCTION

Figures in column at left give first year of service in Polytechnic Institute of Brooklyn and years spent in teaching.

1864 David H. Cochran, Ph. D., LL. D. President and Professor

45 of History and Philosophy, 171 Schermerhorn st.

See also "Administration."

1855 Edward C. Seymour, M. A. Principal of Academic Depart-

40 ment, 72 S. Elliott pl.

See also "Administration."

1855 George W. Collord, M. A., D. D. Professor of Greek and

49 Latin, 1326 Pacific st.

Educated at Columbia.

1856 Robert Foster, M. A., Ph. D. Superintendent, 290 Adelphi st.

42 See also "Administration."

1860 Constantine Hertzberg, Professor of Drawing, 181 S. Oxford st.

46 Educated at Dresden, Germany.

1863 George W. Plympton, M. A., C. E. Professor of Physical

38 Science and Engineering, 127 Herkimer st.

Educated at Rensselaer Polytechnic Institute.

1863 Rufus Sheldon, M. A. Professor of Pure Mathematics, 20

37 S. Elliott pl.

See also "Administration."

1868 Brainerd Kellogg, M. A. Professor of the English Lan-

38 guage and Literature, 127 St John's pl.

Educated at Middlebury College.

1869 Rodney G. Kimball, M. A., Ph. D. Professor of Applied

36 Mathematics and Engineering, 253 Monroe st.

Educated at College of the City of New York.

1884 Charles A. Lador, M. A. Professor of the French Language

23 and Literature, 158 Cleveland st.

Educated at Lausanne, Switzerland.

- 1886 Charles H. Pluggé, M. A. Professor of the German Language  
25 and Literature, 187 Joralemon st.  
Educated in Germany.
- 1886 Gustave Carteaux, M. A. Adjunct Professor of the French  
12 Language, 154 Montague st.  
Educated at Paris.
- 1889 Henry E. Northrup, M. A. Adjunct Professor of the German  
12 Language, 480 Jefferson av.  
Educated at Yale and Leipzig.
- 1889 Samuel Sheldon, M. A., Ph. D. Professor of Physics and  
6 Electrical Engineering, 20 Sidney pl.  
Educated at Middlebury College and Germany.
- 1889 Howard V. Frost, M. A., Ph. D. Professor of Chemistry, 18  
8 Sidney pl.  
Educated at Massachusetts Institute of Technology and  
Germany.

## VACANCIES

- Louis V. Piersson, Ph.D. Professor of analytical chemistry.  
12 Resigned Je 1889.
- 11 Leo A. Stäger, Professor of German. Resigned Je 1889.

## APPOINTED DURING YEAR

- Howard V. Frost, M. A., Ph. D. Professor of chemistry.  
Henry E. Northrup, M. A. Adjunct professor of German.  
Samuel Sheldon, M. A. Ph. D. Professor of physics and  
electrical engineering.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Charles M. Williams.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

(None)

## REQUIREMENTS FOR ADMISSION

The conditions for admission correspond generally to those for entrance into the freshman class of the leading schools of science and arts. The institute courses are, however, specially arranged to secure a continuity and progression in the advanced branches

of those courses of study which are begun in the academic department of the institution.

Candidates for admission to the institute must have completed the studies of the academic department prescribed on the course selected.

Regents' certificates will be accepted for the ground they cover.

## COURSES OF STUDY

The institute provides the following special courses of study for particular classes of students :

*The classical* or preparatory collegiate course embraces all the studies required for admission to the freshman class in our most advanced colleges.

*The scientific* includes the entire course in mathematics, physical science, modern languages and drawing, together with political economy, logic and moral philosophy. This course is subdivided at the close of the second year with regard to the student's choice of a profession, one branch having reference to civil engineering, and the other to applied chemistry and electrical engineering.

*The engineering* course carries the student in mathematics over a course of study extending from one to two years beyond that in the ordinarily required course of our American colleges, and includes over 200 out-door exercises.

*The chemical* course after finishing general chemistry and blow-pipe analysis (which are common to both) occupies the student in the laboratory an average of at least three hours per day for two years, in analysis of inorganic compounds, toxical examinations, and commercial testing of paints, drugs and medicines, and the assay of ores of iron, lead, copper, silver and gold.

*The electrical* course includes the work, theoretical and practical, requisite for the profession of the electrical engineer.

*The liberal* course includes all the branches of study of the regular college course with the exception of Latin and Greek, for which are substituted a four years' course in French and German and a more extended course in English language and literature, and in history.

*The commercial* course comprises English grammar, commercial arithmetic, elementary algebra, modern history, physical geography, chemistry, civil government, and thorough training in penmanship and book-keeping.



CLASSICAL COURSE — (TWO YEARS)		COMMERCIAL COURSE — (ONE YEAR)	
FIRST YEAR	SECOND YEAR		
<p><i>Æneid</i>, books 1, 2 Greek grammar or Laboratory physics Algebra</p> <p><i>Æneid</i>, books 3, 4 Greek grammar or laboratory physics Algebra</p> <p><i>Æneid</i>, books 5, 6 Xenophon's <i>Anabasis</i> or Modern language Geometry</p> <p>Sallust's <i>Catiline</i> Latin composition Xenophon's <i>Anabasis</i> or Modern language</p>	<p>FIRST TERM</p> <p>Sallust's <i>Catiline</i> Latin composition Xenophon's <i>Anabasis</i> or Modern language</p> <p>SECOND TERM</p> <p>Cicero's <i>Orations</i> Latin composition Xenophon's <i>Anabasis</i> or Modern language</p> <p>THIRD TERM</p> <p>Geometry, reviewed Cicero's <i>Orations</i> Homer's <i>Iliad</i> and Greek composition or Modern language Ancient geography</p> <p>FOURTH TERM</p> <p>Cicero, reviewed Homer's <i>Iliad</i> and Greek composition or Modern language Ancient geography</p>	<p>English prose composition Civil government Commercial arithmetic Book-keeping — double entry Penmanship Optional studies: Chemistry, French, German, Spanish, drawing</p> <p>Commercial arithmetic Civil government Book-keeping — double entry Penmanship Optional studies: as in first term with addition of modern history</p> <p>Commercial law Business practice and commercial calculations Book-keeping — double entry applied Optional studies: as in second term</p> <p>Commercial law Business practice and commercial calculations Book-keeping — double entry applied Optional studies: as in second term</p>	

Students fitting for special courses in colleges not requiring Greek will in the place of Greek take laboratory physics during the first two terms, and will take optional studies, under direction of the faculty, during the remainder of the course.

SCIENTIFIC COURSES (ENGINEERING, CHEMICAL, ELECTRICAL ENGINEERING)		LIBERAL COURSE	
FRESHMAN CLASS	SOPHOMORE CLASS	FRESHMAN CLASS	SOPHOMORE CLASS
Algebra Chemistry Physical geography French or German grammar	Geometry Zoology Topographical drawing French grammar and reading or German grammar and reading	FIRST TERM Algebra Chemistry Physical geography French and German, as in scientific courses	Rhetoric Geometry Zoology French and German, as in scientific courses
Algebra Chemistry Mechanical drawing French or German grammar	Geometry and trigonometry Geology Perspective, light and shade French syntax and idioms, reading or German grammar and reading	SECOND TERM Algebra Chemistry Drawing French and German, as in scientific courses	Rhetoric Geometry and trigonometry Geology French and German, as in scientific courses
Geometry Chemistry Mechanical drawing French or German grammar	Higher equations and algebra Geology Perspective, light and shade French or German, as in second term	THIRD TERM Geometry Chemistry Modern history French and German, as in scientific courses	Higher English—debates Higher equations and algebra Geology French and German, as in scientific courses
Geometry Chemistry Mechanical drawing French or German grammar	Applied trigonometry (practical work in engineering course) Electricity, magnetism Blow-pipe analysis French or German, as in second term	FOURTH TERM Geometry Chemistry Modern history French and German, as in scientific courses	English literature Electricity, magnetism, heat Applied trigonometry French and German, as in scientific courses

ENGINEERING COURSE	CHEMICAL COURSE	ELECTRICAL ENGINEERING COURSE	LIBERAL COURSE
JUNIOR CLASS			
FIRST TERM			
Analytic geometry Field work Mechanics French idioms, themes (selections); or German grammar — reviewed, selections	Analytic geometry Field work — adjustment and use of instruments Mechanics French or German, as in engineering course	Analytic geometry Mechanics French or German, as in engineering course	Analytic geometry English literature, essays upon authors Pneumatics, acoustics, optics French and German, as in scien- tific courses
SECOND TERM			
Analytic geometry Hydraulics, pneumatics, acoustics, heat French idioms, themes (selections); or German grammar; selections	Electrical measurements Chemical philosophy Hydraulics, pneumatics, acoustics, heat French or German, as in engineering course	Analytic geometry Hydraulics, pneumatics, acoustics, heat Electrical measurements French or German, as in engineering course	Analytic geometry English literature, essays upon authors Optics, mechanics French and German, as in scien- tific courses
THIRD TERM			
Descriptive geometry, ortho- graphic projections Optics Chemical analysis, qualitative French idioms, themes (selections); or German grammar; selections	Optics Chemical analysis, qualitative Electrical measurements French or German, as in engineering course Laboratory practice, two hours daily	Optics Electrical measurements French or German, as in engineering course	Mechanics, hydrostatics Psychology Drawing French and German, as in scien- tific course
FOURTH TERM			
Differential calculus Field work Descriptive geometry, linear per- spective French idioms completed and re- viewed, reading, or German grammar, selections	Chemical analysis, qualitative French or German, as in engineering course Laboratory practice, two hours daily	Differential calculus Electrical measurements French or German, as in engineering course	Medieval history Psychology, text and themes French and German, as in scien- tific courses

ENGINEERING COURSE	CHEMICAL COURSE	ELECTRICAL ENGINEERING COURSE	LIBERAL COURSE
		SENIOR CLASS	
		FIRST TERM	
Integral calculus Logic, or Architecture Drawing Field work	Logic Drawing Gravimetric analysis of commercial salts Laboratory practice, two hours daily	Integral calculus Mathematical electricity Dynamo electricity Drawing	Logic Science of language English history
		SECOND TERM	
Analytic mechanics Practical mechanics Moral philosophy, or Architecture Field work	Moral philosophy Assaying Laboratory practice, three hours daily	Analytic mechanics Mathematical electricity Dynamo electricity Practical mechanics	Moral philosophy Political economy Anglo-Saxon
		THIRD TERM	
Analytic mechanics Practical mechanics General astronomy Field work	General astronomy Crystallography and mineralogy Chemical analysis Laboratory practice, two hours daily	Analytic mechanics Practical mechanics Electrical testing Electrical theses	General astronomy History of civilization Municipal law
		FOURTH TERM	
Analytic mechanics Practical mechanics Practical astronomy Field work	Determinative mineralogy Laboratory work, three hours daily Drawing	Analytic mechanics Practical mechanics Electrical testing Electrical theses	Constitutional law History of civilization International law



## REQUIREMENTS FOR GRADUATION

Graduates from the liberal course receive the degree of bachelor of arts; graduates from any one of the scientific courses receive the degree of bachelor of science.

Students who complete the commercial course will receive a certificate to that effect.

Students who complete the classical course will receive the diploma of the course.

## BUILDINGS

Main building, four story brick, built 1855, 44 class rooms, 790 seats, total floor area 48,000 sq. ft., value \$50,000. First addition, four story brick, built 1866, value \$20,000. Second addition, four story brick, built 1880, value \$12,000. Third addition, four story brick, built 1885, value \$12,000. New laboratory, one story brick, built 1882, floor area 5,500 sq. ft., value \$8,000. Observatory, one story brick with paper dome, built 1887, value \$2,000. All part of the same building.

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## ST JOHN'S COLLEGE

*Lewis and Willoughby avs., Brooklyn*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
29 S	1871	Incorporated under general law. Conducted by the priests of the congregation of the mission.

## TRUSTEES

President, Very Rev. Jas. McGill, V. C. M. . . . .	Germantown, Pa.
Treasurer, Rev. Jos. J. Elder, C. M. . . . .	Brooklyn
Secretary, Rev. Jas. J. Durkin, C. M. . . . .	"
Rev. J. A. Hartnett, C. M. . . . .	"

## ADMINISTRATION

First year of service in St John's not reported.

President, Rev. J. A. Hartnett, C. M.

Educated at St Vincent's Seminary, Germantown, Pa.

Vice-President, Director of Studies and Secretary, Rev. J. J. Durkin, C. M.

Educated at Niagara University.

Treasurer, Rev. Joseph J. Elder, C. M.

Educated at St Vincent's College, Cape Girardeau, Mo.

## INSTRUCTION

Figures in column at left give years spent in teaching.

11 Rev. J. A. Hartnett, C. M. President.

See also "Administration."

10 Rev. James J. Durkin, C. M. Vice-President and Director of studies.

See also "Administration."

33 Rev. J. A. Moloney, C. M. Professor of History and Christian Doctrine.

Educated at St Mary's Seminary, Barrens, Mo.

21 Rev. Patrick Carroll, C. M. Professor of Senior Class, Latin and Greek.

Educated at All Hallows, Ireland.

15 Rev. Ferdinand L. McCauley, C. M. Professor of Freshman Class and Mathematics.

Educated at St Vincent's College, Cape Girardeau, Mo.

12 Rev. Robert A. Lennon, C. M. Professor of Junior Class, Mathematics and French.

Educated at St Vincent's Seminary, Germantown, Pa.

6 Rev. Joseph J. Elder, C. M. Professor of Book-keeping and French.

See also "Administration."

4 Rev. James H. Neck, C. M. Professor of Sophomore Class, Greek, German and Physics.

Educated at St Vincent's Seminary.

J. V. O'Brien, C. M. Professor of Second Academic, Book-keeping, German and Greek.

Educated at St Vincent's Seminary.

M. J. Rosa, C. M. Professor of First Academic, Latin, Greek and French.

Educated at St Vincent's Seminary.

George V. McKinny, C. M. Professor of Third Academic, History and Penmanship.

Educated at St Vincent's Seminary.

HONORARY DEGREES

(None)

COLLEGE APPOINTMENTS

- Valedictory, William J. White
- Salutatory, George W. Decker
- English oration, Thomas F. Commerford
- Latin oration, Joseph A. McSorley
- Greek oration, Ferdinand A. Keimer
- Philosophical oration, Ferdinand A. Keimer

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Gold medal, for best average in all classes, Edward M. O'Donnell .....	\$25
Holy Bible, for excellence in Christian doctrine, Joseph A. McSorley.....	18

REQUIREMENTS FOR ADMISSION

(None reported)

# COURSES OF STUDY

## CLASSICAL COURSE

FRESHMAN CLASS		JUNIOR CLASS	
<p>Mathematics — Plane geometry. Algebra to quadratics  Latin — Select orations of Cicero, Catullus of Sallust, Prose composition  Greek — Jacobs' Greek reader, Xenophon's Anabasis, Grammar, Prose composition  English — Principles of style, Criticism, Essays  History — Fredet's Ancient  Elocution — Exercises twice a month  Geography — Mitchell's Physical  Astronomy — Lockyer  French — Fasquelle's Method, Bossuet  German — Exercises in reading, writing and speaking  Christian doctrine — De Harbe</p>		<p>Mathematics — Surveying (field exercises), Navigation, Spheric trigonometry  Physics — Magnetism; Electricity  Chemistry — First term — Introductory lectures, Lectures on the non-metallic elements and their compounds; Second term — Lectures on the metals and their compounds  Latin — First term — Odes, epistles and satires of Horace, Agricola of Tacitus, Prose composition; Second term — The Germania of Tacitus, Horace's Ars poetica, Versification  Greek — Thucydides, Homer's Iliad, Demosthenes  English — Blair's Lectures, Criticisms by the class, studies in Shakespeare, Essays  Elocution — Selected orations once a month. Original once a month  History — Fredet's Modern  Christian doctrine — De Harbe</p>	
SOPHOMORE CLASS		SENIOR CLASS	
<p>Mathematics — Spherical geometry, Algebra (completed), Plane trigonometry, Mensuration of solids  Astronomy — Lockyer  Physics — First term — Theoretical mechanics, liquids, gases; Second term — Sound, light and heat  Latin — Sallust's Bellum Jugurthinum, Æneid of Virgil, Livy, Prose composition, Prosody  Greek — Herodotus, Selections from the Greek historians, Lucian's Dialogues, Prose composition  English — Recitations, Criticisms, Essays  History — Fredet's Modern  Elocution — Exercises twice a month  French — Fasquelle's Method, Bossuet  German — Exercises in reading, writing and speaking  Christian doctrine — De Harbe</p>		<p>Mathematics — Analytic geometry, Calculus  Physiology — Lectures  Chemistry — Chemical physics, Analysis of the carbon compounds, Laboratory work  Philosophy — First term — Logic and general metaphysics; Second term — Cosmology, psychology and natural theology  English — Lectures on English literature, Essays, Versification  History — Lectures on church history  Evidences of religion — Lectures once a week</p>	

In the commercial course particular attention is given to arithmetic, letter-writing, book-keeping and commercial law.



## REQUIREMENTS FOR GRADUATION

Students who have completed the collegiate course, in a manner satisfactory to the faculty, will receive the degree of bachelor of arts; and two years afterwards the degree of master of arts will be conferred on such of their number as shall have devoted themselves in the meantime to literary or scientific studies.

Commercial diplomas are awarded to students of the commercial department on the satisfactory completion of their course.

## BUILDINGS

Main building, six story brick and brown stone, built 1872, value \$80,000. Class room building, four story brick and brown stone, built 1869, 14 class rooms, value \$45,000. Library and laboratory, built 1872.

## ST BONAVENTURE'S COLLEGE

### *Allegany*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

1859 Institution founded.

1 Mr 1875 Regents granted provisional charter.

11 Ja 1883 Charter made absolute. College conducted by brothers of the Minor Order of St Francis.

## TRUSTEES

Elected

1875	President, Very Rev. Charles A. Vissani, O. S. F.	New York
1876	Treasurer, Very Rev. Leo da Saracena, O. S. F.	Winsted, Ct.
1876	Secretary, Very Rev. Anacletus da Roccagorga,	
	O. S. F. ....	New York
1886	Nicholas Devereaux. ....	Utica
1887	Rev. Julius ab Arpino, O. S. F. ....	New York
1887	Rev. Camillus Bonifazii, O. S. F. ....	Boston
1887	Rev. Athanasius Butelli, O. S. F. ....	"
1887	Rev. Angelus M. O'Connor, O. S. F. ....	New York
1888	Rev. Bernardine McCabe, O. S. F. ....	"
1888	Rev. Daniel Da Toffia, O. S. F. ....	"

## ADMINISTRATION

Figures in column at left give first year of service in St Bonaventure's.

1875 President and Treasurer, Very Rev. Joseph F. Butler, O. S. F.  
Educated at St Bonaventure's.

1878 Vice-President and Secretary, Rev. Joachim J. Molloy, O. S. F.  
12 Educated at St Bonaventure's.

Registrar, Rev. Francis Coen, O. S. F.  
Educated at St Isidore's College, Rome.

Assistant Prefect of Studies, Rev. P. Wilson.

Assistant Disciplinarian, Rev. J. Doyle.

Physician M. C. Follett, M. D.

## INSTRUCTION

Figures in column at left give first year of service in St Bonaventure's and years spent in teaching.

1875 Very Rev. Joseph F. Butler, O. S. F. Professor of Higher  
15 Mathematics, Rhetoric, Geography and Christian Doctrine  
See also "Administration."

1878 Rev. Joachim J. Molloy, O. S. F. Professor of Book-keep-  
12 ing and the Natural Sciences.  
See also "Administration."

1878 Rev. John Roser, O. S. F. Professor of Hebrew, Canon Law  
12 and Liturgy.

Educated at University of Bonn; Professor of Latin, Greek and German, 1878-84; Professor of Philosophy. 1884-6.

1886 Rev. Cyprian Da Monte, O. S. F. Professor of Sacred Scrip-  
4 ture, Hermeneutics and Canon Law.

Educated at St Bonaventure's College, Quaracchi, Italy.

1884 Rev. Bonaventure M. Fuchs, O. S. F. Professor of Mental  
6 Philosophy.

Educated at St Bonaventure's; Professor of Latin, Greek and German, 1884-8.

1878 Rev. Francis Coen, O. S. F. Professor of Latin and Greek.  
12 See also "Administration."

1880 Rev. Lewis Stanton, O. S. F. Professor of Latin, Greek and  
10 English.

Educated at St Bonaventure's.

1887 Joseph Scott. Professor of Rhetoric and Elocution.

3 Educated at St Cuthbert's College, England.

1888 Leonard F. Floria, O. S. F. Professor of Latin and Arithmetic.

2 Educated at St Bonaventure's.

1889 Ludovico I. Foppiano, O. S. F. Professor of Latin and

1 English.

1887 Michael P. Mann, O. S. F. Professor of Greek, Rhetoric and

10 Mathematics.

Educated at St Bonaventure's; Professor of Latin, Greek and Rhetoric, St Francis' College, 1880-7.

1881 Andrew W. Slattery, O. S. F. Professor of English, Arith-

8 metic, Algebra and Christian Doctrine.

Educated at St Bonaventure's.

1887 Sixtus C. Lagorio, O. S. F. Professor of Greek.

3 Educated at University of Genoa, Italy.

1878 William F. Krampf. Professor of Vocal and Instrumental

12 Music.

Graduated at the College of Music, Wurzburg, Bavaria 1870.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, John Fitzgerald.....	Fairfield Conn.
Salutatory, Eugene Sullivan.....	Colchester, Conn.
English oration, John J. Loughran .....	Archbald, Pa.
Philosophical oration, John Fitzgerald .....	Fairfield, Conn.
Historical oration, Eugene L. Sullivan.....	Colchester.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

There were five gold medals, three silver medals and a large number of books given as prizes at the close of the scholastic year. (Names not reported.)

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

The following courses of study are offered: Ecclesiastical, philosophical, classical, scientific and commercial.

*The ecclesiastical course*, which is completed in four years, embraces dogmatic and moral theology, canon law, Scripture (exegesis), hermeneutics, sacred eloquence, Hebrew and Arabic languages, liturgy, ecclesiastical history and Gregorian chant.

*The philosophical course*, which is completed in two years, embraces logic, ontology, cosmology, psychology, history of philosophy, philosophical thesis and issues, natural history, ethics general and particular, Hebrew language.



The classical and scientific course is completed in six years; the studies of the last four years are given below :

THIRD YEAR	FIFTH YEAR
<p>English — Brown's Grammar composition and elocution, Fredet's Ancient history, Geography  Latin — Bullion's Grammar, Caesar and Ovid  Greek — Grammar, Arnold's First Greek book  Arithmetic — Davies' University algebra (Robinson's)  Book-keeping — Orittenden's  Penmanship  Scripture history — Kerney's</p>	<p>Belles-lettres — General principles of style, essays, debates, Fredet's Modern history  Latin — Cicero's Orations, Virgil, Livy, Arnold's Composition  Greek — Grammar (Bullion's), Arnold's Composition, Xenophon's Anabasis  Mathematics — Geometry (Davies'), Trigonometry  Natural history — Dissertations by the professors  Chemistry, Astronomy — Norton's  Christian doctrine</p>
FOURTH YEAR	SIXTH YEAR
<p>English — Brown's Grammar, composition, elocution, Fredet's Modern history, Geography (descriptive)  Latin — Sallust and Virgil  Greek — Grammar (Bullion's), Greek reader  Mathematics — Algebra (Robinson's)  Natural philosophy — (Norton's), Mythology  Phonography  Scripture history — Kerney's  Christian doctrine</p>	<p>Rhetoric — (Quackenbos'), Essays, debates  Latin — Horace, Tacitus, Latin composition  Greek — Homer's Iliad, Arnold's Greek composition  Natural philosophy  Mathematics — Trigonometry (plain and spheric), Surveying and navigation, Analytic geometry, Conic sections, Calculus  Telegraphy  Christian doctrine</p>

## COMMERCIAL COURSE

FIRST YEAR	THIRD YEAR
<p>English—Brown's Grammar, composition, elocution, Fredet's Ancient history, Geography            Arithmetic—Davies' University            Book-keeping—Crittenden's            Penmanship            Christian doctrine</p>	<p>English—Brown's Grammar, composition, elocution, Commercial correspondence            Phonography            Natural history—Lectures            Astronomy and chemistry—Norton's            Mathematics—Robinson's Algebra            Book-keeping—Crittenden's            Scripture history—Kerney's            Christian doctrine</p>
SECOND YEAR	FOURTH YEAR
<p>English—Brown's Grammar, composition, elocution, Fredet's Ancient history, Geography            Arithmetic—Davies' University            Algebra—Robinson's            Natural philosophy (experimental), Mythology            Book-keeping—Crittenden's            Scripture history—Kerney's            Penmanship            Christian doctrine</p>	<p>English—Quackenbos' Rhetoric, essays, debates, commercial law            Mathematics—Geometry, mensuration, surveying, navigation and telegraphy</p>

## BUILDINGS

Main building, four story brick, built 1856, floor area 11,200 sq. ft. Chapel included in main building, one story brick, built 1863, floor area 5,000 sq. ft.; value of main building and church, \$136,000. Dormitory, five story brick, built 1856, floor area 14,726 sq. ft., value \$25,000. Class room included in dormitory building, three story, floor area 5,120 sq. ft., 12 class rooms, 200 seats. The following are included in one brick building built in 1887, value \$18,000: Exhibition hall, one story, floor area 4,000 sq. ft., 500 seats.; art rooms, floor area 1,360 sq. ft.; laboratory and museum room, floor area, 900 sq. ft.; observatory, floor area, 144 sq. ft.; gymnasium two story, floor area 4,000 sq. ft., four class rooms.

## ADDITIONAL INFORMATION

A four story brick building, 155 ft. by 60, to be used for college purposes and to cost about \$25,000 is in course of erection.

## CANISIUS COLLEGE

651 *Washington st., Buffalo*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

S 1870 College opened by fathers of the Society of Jesus.  
11 Ja 1870 Regents granted charter.

83

## TRUSTEES

Elected

1888 President, Rev. J. Ulric Heinzle, S. J. ....	Canisius College
1886 Treasurer, Rev. Otto Hogenforst, S. J. ....	" "
1883 Secretary, Rev. Martin Bishoff, S. J. ....	" "
1883 Rev. F. X. Delhez, S. J. ....	" "
1883 Rev. Herman Keokhoff, S. J. ....	" "
1883 Rev. Theodore Van Rossum, S. J. ....	" "
1884 Rev. Anthony Guggenberger, S. J. ....	" "
1885 Rev. Louis Buchholtz, S. J. ....	" "
1886 Rev. James Conway, S. J. ....	" "
1886 Rev. Joseph LeHalle, S. J. ....	" "

## ADMINISTRATION

First year of service in Canisius College not reported.

- President, Rev. J. Ulric Heinzle, S. J.  
 Treasurer, Rev. Otto Hogenforst, S. J.  
 Prefect of Studies for the Classical Department, Rev. Joseph Le Halle, S. J.  
 Prefect of Studies for the Commercial Department, Rev. Herman Kerckhoff, S. J.  
 Prefect of Discipline for the Boarders, Rev. Francis X. Delhez, S. J.  
 Prefect of Discipline for the Day-Scholars, Rev. Theodore Van Rossum, S. J.

<sup>1</sup>INSTRUCTION

First year of service in Canisius College and years spent in teaching not reported.

- Rev. J. Ulric Heinzle, S. J., President.  
 Rev. Joseph Le Halle, S. J. Professor of Humanities.  
 Rev. Herman Kerckhoff, S. J. Professor of First Commercial.  
 Rev. Francis X. Delhez, S. J.  
 Rev. Theodore Van Rossum, S. J. Professor of Third Grammar.  
 Rev. Anthony Guggenberger, S. J. Professor of Rhetoric, History and Evidences of Religion.  
 Rev. Ignatius Koerling, S. J. Professor of Latin and Greek in the Class of Rhetoric.  
 Rev. Martin Bischoff, S. J. Professor of Mathematics, Physics and Chemistry.  
 Rev. James Conway, S. J. Poetry.  
 Rev. Louis Buchholtz, S. J. First Grammar.  
 Rev. Joseph Gaechter, S. J. Second Grammar.  
 Rev. Victorinus Scheppach, S. J. Second Commercial.  
 George Rueppel, S. J. Third Commercial.  
 Sebastian Huber, S. J. Fourth Commercial.  
 Charles Falk, S. J. Teacher of Short-hand.  
 Rev. Louis Bonvin, S. J. Director of College Choir and Orchestra and Teacher of Singing.

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<sup>1</sup> Including faculty and officers of all departments as reported in catalogue of 1889-90.



## ASSISTANT TEACHERS AND PREFECTS OF DISCIPLINE

Rev. Charles Wisthoff, S. J.

Rev. George Burkard, S. J.

John Spirig, S. J.

Leo Perrig, S. J.

Oswald Mueller, S. J.

Henry Nellis, S. J.

Thomas Ashton. Professor of Book-keeping, Political Economy and Elocution.

Thomas Lee. Teacher of Arithmetic, Geography and Type-writing.

## TEACHERS OF MUSIC

Charles Mischka.

Ignatius Czerwinski.

John Gelbke.

Sylvan Herman.

Henry Schmitt. Teacher of Drawing.

Patrick E. O'Brien. Teacher of Gymnastics.

## VACANCIES

Frederick Ehret, S. J. Resigned N 1889.

Rev. Peter Mueller, S. J. Professor of Latin and Greek.  
Resigned F 1890.

Patrick Behan, S. J. Professor. Resigned Je 1890.

Francis Heissmann, S. J. Professor. Resigned Je 1890.

Rev. Godfrey Schulte, S. J. Professor. Resigned Je 1890.

Rev. Augustine Steffen, S. J. Professor. Resigned Je 1890.

## APPOINTED DURING YEAR

Rev. Joseph Gaechter, S. J. Professor of second grammar.  
Appointed S 1889.

Thomas Lee. Teacher of arithmetic, geography and type-writing. Appointed F 1890.

## HONORARY DEGREES

B. A.—Caryl Coleman . . . . . New York

M. A.—Edwin C. Wagner, M. D. . . . . Wilkes Barre, Penn.

## COLLEGE APPOINTMENTS

Latin oration, John Lutz . . . . . New York

German oration, Joseph Haas . . . . . Buffalo

English “ John Forbes . . . . . Minnesota

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Prize of honor \$10	John Lutz . . . . .	New York
"	Edward Mulloy . . . . .	New York
"	Jacob Paulus . . . . .	Buffalo
Prize of application \$10	Frederick A. Houck,	Ohio
"	August Pappert . . .	New York
"	Joseph Haas . . . . .	Buffalo
First premium in humanities,	Frank Braeunig,	Ohio
"	poetry, Joseph Miller . . . . .	Ohio
"	rhetoric, John Lutz . . . . .	New York
"	fourth commercial class,	
	Philip Pfohl . . . . .	Buffalo
"	third commercial class, Wal-	
	ter Wilhelm . . . . .	"
"	second commercial class,	
	Joseph Goetz . . . . .	"
"	first commercial class, Peter	
	Franzer . . . . .	Illinois

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

The classical course is finished in seven years, the studies of the last four are given below.

## CLASSICAL COURSE

## CLASS OF HUMANITIES (FOURTH YEAR)

Christian doctrine — Schouppe, with explanation  
 Latin — Grammar: Cicero: *De senectute*, Selections from Ovid's *Metamorphoses* and *Tristia*, Mueller's Exercises for translation into Latin, Written exercises  
 Greek — Irregular verbs, reader, Xenophon's *Cyropædia*, bk. 1; Written exercises  
 English — Prose composition, Scott's *Lady of the lake*, Shakspeare's *Julius Cæsar*, History of American literature, Elocution  
 Mathematics — Peck's *Algebra*, Geometry, bk. 1  
 History of the middle ages  
 Book-keeping (optional)

## CLASS OF POETRY (FIFTH YEAR)

Religious instruction — Schouppe, with explanation  
 Latin — Cicero: *In Catilinam* 1, *Pro Archia*, Livy, book 21, Virgil's *Æneid*, bks 1, 2, Mueller's Exercises for translation into Latin, Written and oral exercises  
 Greek — *Thucydides*, bk 1, Homer's *Iliad*, bks 1, 2, Grammar, written exercises  
 English — Poetry (epic, lyric, dramatic), Milton's *Paradise lost*, and Shakspeare's *Macbeth*; History of English literature, Original composition in prose and verse, elocution  
 Modern history — Manuscript of professor  
 Mathematics — *Algebra*, Geometry, books 2-6  
 Natural philosophy, Avery's  
 Chemistry

## CLASS OF RHETORIC (SIXTH YEAR)

Religious instruction — Schouppe  
 Latin — Cicero's *Orations Pro lege Manlius*, pro Milone, Horace, Select odes, *Ars poetica*, Sermo 1, 9, Compositions  
 Greek — Demosthenes, *Philippics* 1, 2, 3, Sophocles, *Electra*  
 English — Coppens, Art of oratorical composition, Goodrich, Select British eloquence, Outlines of English and American literature, Speeches and debates  
 History — European history from the French revolution, American history (manuscript of professor), Review of the middle ages and modern times  
 Mathematics — Geometry, Trigonometry  
 Natural philosophy, Avery's  
 Chemistry, Professor's manuscript

## CLASS OF PHILOSOPHY (SEVENTH YEAR)

Mental philosophy — Logic, General and special metaphysics, Lectures delivered in Latin. The students are required to recite in Latin, and to hold disputations in that language twice a week  
 Moral philosophy — Ethics and natural law, Lectures, etc., in Latin  
 Mathematics — Analytic geometry  
 Natural philosophy  
 Astronomy

## COMMERCIAL COURSE

FOURTH COMMERCIAL (FIRST YEAR)	SECOND COMMERCIAL (THIRD YEAR)
<p>Christian doctrine — Deharbe's Catechism, Schuster's Bible history            Arithmetic, Fish            English — Grammar, spelling, reading, declamation, weekly compositions            Geography            Penmanship            Drawing</p>	<p>Christian doctrine — Deharbe's Catechism            Mathematics — Arithmetic and algebra            English — Grammar, spelling and dictation, elocution and declamation,            Weekly compositions            Geography — Asia, Africa, Australia, Physical geography            Book-keeping — Double entry            Penmanship</p>
<p>THIRD COMMERCIAL (SECOND YEAR)</p> <p>Christian doctrine — Deharbe's Catechism            Arithmetic            English — Grammar, declamation, weekly compositions            Book-keeping — Single entry            Geography            History of the United States            Penmanship</p>	<p>FIRST COMMERCIAL (FOURTH YEAR)</p> <p>Christian doctrine — Deharbe's Catechism            Mathematics — Algebra, arithmetic            English — Description, narration, poetry            History — Middle ages            Natural philosophy, Avery            Chemistry            Commercial law</p>

Besides the obligatory branches of the classical and the commercial course, instruction is given to those who desire it, in the German and French languages, in drawing, short-hand, and instrumental music. From these optional branches, however, pupils are excluded who do not give satisfaction in their obligatory studies.



## REQUIREMENTS FOR GRADUATION

Students who successfully complete the classical course receive the degree of bachelor of arts. A certificate is granted at the end of the commercial course.

## BUILDINGS

Main building, five story brick, built 1872, floor area 25,000 sq. ft., value \$21,000. Chapel, one story brick, built 1880, floor area 500 sq. ft., 400 seats. Dormitory rooms, brick, built 1872 and 1880, floor area 10,000 sq. ft. Class room building, five story brick, built 1880, 400 seats, value \$45,000. President's and professors' house, five story brick, built 1881, value \$34,000. Exhibition hall, two story brick, built 1880. Villa house, three story brick, built 1876, value \$3,500. Library, laboratory and museum rooms included in main building.

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## NIAGARA UNIVERSITY

CONSISTING OF

Collegiate Department

Medical Department

Law Department (Buffalo  
Law School)

Seminary of our Lady of  
Angels

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1856	An institution of learning founded by priests of the congregation.
20 Ap	1863	Legislature incorporated Seminary of our Lady of Angels and authorized regents to erect same into a college whenever they felt justified and upon petition of the trustees. College conducted by priests of congregation mission.
15 My	1877	A seminary of same name formed in 1861 empowered to convey its property to this institution.
12 Mr	1883	Legislature amended charter by giving right to maintain any department of learning taught in any college or university in the state and to locate and maintain same in Erie county.

Month Year

- 7 Ag 1883 Regents erected seminary into a college and changed name to Niagara University.  
 1883 Medical department organized, in connection with Buffalo Hospital of sisters of charity.  
 3 My 1884 Legislature amended charter by prescribing conditions for granting degree of M. D.  
 9 My 1887 Law department organized. Management wholly under control of law faculty.

## COLLEGIATE DEPARTMENT

*Niagara University*

For historic sketch see foregoing.

## TRUSTEES

Elected

- 1883 President, Rt. Rev. S. V. Ryan, C. M.,  
 D. D ..... Buffalo  
 1883 Vice-President, Very Rev. P. V. Kavanagh, C. M ..... "  
 1887 Treasurer, Rev. J. J. V. Talley, C. M... Niagara University  
 1883 Secretary, Rev. M. J. Kircher, C. M .... " "  
 1883 Rev. E. A. Antill, C. M..... " "  
 1884 Rev. J. Alizeri, C. M ..... " "  
 1887 Rev. C. J. Eckles, C. M ..... " "  
 1887 Rev. H. B. Menniges, C. M ..... " "  
 1889 Very Rev. James McGill, C. M ..... " "

## APPOINTED DURING YEAR

- 1890 Rev. Luke Grace, C. M..... " "

## VACANCIES

Rev. F. McCauley, Brooklyn, resigned 11 S 1889

## ADMINISTRATION

Figures in column at left give first year of service in Niagara University.

- 1865 President, Very Rev. P. V. Kavanagh, C. M.

Instructor in Latin, St Mary's College, Mo. 1860-2; Professor of Greek, Latin, mathematics, physics and English literature, Niagara University 1865-.

- 1881 Vice-President and Prefect of Studies, Rev. E. A. Antill, C. M.

Professor of mathematics, St Vincent's Seminary, Germantown 1876-8; Professor of mathematics, St Vincent's College, Cape Girardeau, Mo. 1878-81.

- Treasurer, Rev. J. J. V. Talley, C. M.

Teacher of English and mathematics for 10 years, St Vincent's College, Cape Girardeau, Mo.

- 1872 Secretary and Librarian, Rev. M. J. Kircher, C. M.

Instructor in Latin, German and preparatory classes, St John's College, Brooklyn 1871-2; Professor of Latin and Greek, Niagara University 1872-, Professor of theology and cognate sciences 1873-; Fellow of the Society of Science, Letters and Arts, London; Published Gospel of St John, 1877, Study of German classics, 1884.

- 1889 Prefect of Discipline, Rev. D. J. Downing, C. M.

## INSTRUCTION

Figures in column at left give first year of service in Niagara University and years spent in teaching.

- 1865 Very Rev. P. V. Kavanagh, C. M. Professor of Zoology and  
30 Geology.

See also "Administration."

- 1881 Rev. E. A. Antill, C. M. Professor of Latin, Greek,  
15 Analytical Geometry, Calculus, Natural Philosophy and Chemistry.

See also "Administration."

- 1872 Rev. M. J. Kircher, C. M. Professor of German, French,  
20 Greek and Latin.

See also "Administration."

- 1884 Rev. H. B. Menniges, M. A., C. M. Professor of Hebrew,  
17 Greek, German, Rhetoric, History, Natural Philosophy, Astronomy, Composition, Declamation and Christian Doctrine.

B. A. St Vincent's College, Cape Girardeau, Mo. 1871, M. A. 1873; Professor of German and Latin, Germantown Select School 1873-7; Professor of German, Latin and mathematics, St Vincent's College 1877-8; Professor of Greek, Latin, German and mathematics, St John's College, Brooklyn 1878-84.

1879 Rev. L. A. Grace, C. M. Professor of Latin, Rhetoric, His-  
14 tory, Composition, French, Declamation and Christian  
Doctrines.

Taught in Germantown, Pa., Latin, French, English 1876-9.

1886 Rev. J. O. Hayden, B. A., C. M. Professor of Mental  
15 Philosophy.

B. A. St Vincent's College, Cape Girardeau, Mo. 1875; Instruc-  
tor in mathematics, St Vincent's Academy, Germantown,  
Pa. 1875-9; Instructor in mathematics and commercial law,  
St John's College, Brooklyn 1880-5.

1888 E. Rengel, B. A. Professor of German.

2 B. A. Manhattan College 1888.

1885 J. E. Rieger, Professor of Music.

6

1884 Rev. J. Alizeri, C. M. Professor of Italian and Spanish.

42 Instructor in Latin, St Mary's Seminary, Perryville, Mo.  
1846-7; Instructor in Latin, Italian, Spanish, Portuguese,  
French, St Vincent's College 1849-66; Instructor in theology  
and cognate sciences, Carandolet Seminary, Mo. 1866-7;  
Instructor in theology and Latin, St Vincent's Seminary,  
Germantown, Pa. 1867-83.

#### VACANCIES

Rev. B. T. Burke, educated in Ireland. Resigned.

W. F. Likly. Resigned.

#### HONORARY DEGREES

M. A.—John Murphy .....	Cleveland
Peter O'Neill .....	Dushore, Pa.
John Walsh .....	Ansonia, Ct.

#### COLLEGE APPOINTMENTS

English oration, B. Heaney .....	Illinois
Classical oration, Matthew Dwyer .....	New York

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

##### MC GINNIS BURSSES

	Value
First, Alexander McKay, Pennsylvania .....	\$200
Second, John Hartigan, New York .....	200



ECKLES BURSSES

	Value
First, A. J. O'Connor, New York.....	\$200
Second, Terence Moran, Rhode Island .....	200

REQUIREMENTS FOR ADMISSION

(None reported)

COURSES OF STUDY

FRESHMAN CLASS

Latin — Horace's Odes, Satires; Tacitus; Prosody, Versification, Prose composition, Latin synonyms and Latin literature  
 Greek — Sophocles, Plato, Schultheis' Grammar and Rainer's Exercises  
 English — Rhetoric, lectures, essays and Elocution  
 History — Vuibert's  
 Trigonometry — Loomis  
 Natural philosophy — Norton  
 Astronomy — Lockyer  
 French — Ahn  
 German — Ahn  
 Christian doctrine — Perry

SOPHOMORE CLASS

Latin — Cicero De officiis, Horace's Ars poetica, Juvenal, Latin essays and conversations, one Latin oration, Latin literature  
 Greek — Greek literature, Prose composition, Thucydides, Demosthenes  
 Mathematics — Analytic geometry, Calculus, Astronomy completed,  
 Natural philosophy completed  
 English — Rhetoric, lectures, essays, Jenkin's English literature, Critical study of English poets, Elocution  
 History — Vuibert's  
 Christian doctrine — Perry's Instruction

JUNIOR CLASS

Mental philosophy — Logic and metaphysics — Sanseverino  
 Chemistry — Nichol  
 Zoology — Nicholson  
 English — Rhetoric, History, Essays, Elocution, Jenkin's Hand-book of English and American literature, Original orations  
 French, German, Spanish and Italian — Optional  
 Church history, Sacred Scriptures and Hebrew for ecclesiastical students

SENIOR CLASS

Mental philosophy completed, Cosmology, Anthropology, Natural the-  
 ology, Ethics, History of philosophy and critical examinations of vari-  
 ous systems, Chemistry completed, Geology, Lectures on recent events  
 in history, Lectures on English literature and eloquence, Original  
 orations; French, German, Spanish and Italian — Optional, Church  
 history, Sacred Scriptures and Hebrew for ecclesiastical students

REQUIREMENTS FOR GRADUATION  
(None reported)

BUILDINGS

Main building, six story stone, built 1856, value \$208,760. Chapel, dormitory, nine class rooms, library, laboratory, museum and observatory, included in main building. Gymnasium, one story stone.

ST FRANCIS' COLLEGE

41 Butler st., Brooklyn

HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
O	1859	Opened for admission of students.
2 Je	1868	Legislature incorporated St Francis Monastery, Brooklyn. Declared object, education of children poor and rich, visiting and assisting the poor.
8 My	1884	Property limit raised to \$250,000. Trustees conditionally empowered to establish literary college and confer degrees.

TRUSTEES

President, Rt. Rev. John Loughlin, D. D.	Brooklyn
Vice-President Rev. William J. Hill, M. A.	"
Secretary, Joseph P. Hill, O. S. F.	"
James F. Carrier, O. S. F.	
John L. Devenney, LL. B.	32 Third pl.
Hon. Charles Donohue, LL. D.	
Rev. James S. Duffy.	
Patrick J. Garvey, O. S. F.	
John Griffin, M. D.	90 Sands st.
Hon. John J. Kiernan.	56 First pl.
Robert Magner, O. S. F.	
Rev. Joseph P. O'Connell, D. D.	

## ADMINISTRATION

First year of service in St Francis' College not reported.

President, Treasurer, Registrar, and Prefect of Studies and Discipline, Brother Jerome, O. S. F.

Educated at St Francis'.

Vice-President and Secretary, Brother Paul, O. S. F.

Educated at St Francis'.

Assistant Treasurer, Brother Isidore, O. S. F.

Educated at St Francis'.

Chaplain, Rev. Charles Farrelly.

## INSTRUCTION

Figures in column at left give years spent in teaching, first year of service in St Francis' not reported.

22 Brother Paul, O. S. F. Professor of Higher Mathematics, Rhetoric and English Literature.

See also "Administration."

18 Brother Clement, O. S. F. Professor of Phonography and German — Graduating Commercial Class.

Educated at St Francis'.

14 Brother James, O. S. F. Professor of First and Second Preparatory Classes.

Educated at St Francis'.

3 Brother Ivo, O. S. F. Professor of French, Greek and Physics — Sophomore and Senior Classes.

20 Paul C. Martin, Ph. D. Professor of Mental Philosophy and Ethics.

8 Secunda Marchisio. Professor of Latin — Senior, Junior and Sophomore Classes.

10 Emil Joos, Ph. D. Professor of Physics — Greek, Junior Class.

3 Brother Capistian, O. S. F. Professor of Latin and Greek — Freshman Class.

Educated at St Francis'.

Brother John, O. S. F. Professor of Drawing and Painting.

Brother Joseph, O. S. F. Procurator and Assistant Prefect.

Rev. Father Morris. Professor of Second Commercial Class.



- 4 Brother Camillus, O. S. F. Teacher of Third Commercial Class.
- 10 Brother Linus, O. S. F. Teacher of Fourth Commercial Class.
- 14 John H. Sullivan. Professor of Third Preparatory Class.
- 1 Brother Victor, O. S. F. Teacher of Latin, Third Preparatory Class.
- 20 P. S. M. Monroe. Professor of Elocution.
- 6 Alonzo M. Knæbel. Professor of Instrumental Music, Piano and Organ.
- 10 Dr Anderson. Professor of Physical Culture.
- 20 Benjamin B. Isaacs. Teacher of Music.

## VACANCIES

- 9 Brother Henry. Teacher of second and third commercial classes. Resigned.
- 2 Brother Chrysostom. Teacher of second primary class. Resigned.
- 40 William Keenan. Professor of elocution. End of term.
- 6 Robert Mayne. Professor of elocution. End of term.

## APPOINTED DURING YEAR

- 19 P. S. M. Monroe. Professor of elocution.
- 3 Brother Camillus. Teacher of third commercial class.

## HONORARY DEGREES

M. A.—	John Patrick Campbell, B. A.....	Brooklyn
	Rev. Michael Henry Carey, S. T. B....	"
	James Cusack.....	"
	James Thomas Egan, B. A.....	Wickford, R. I.
	Rev. Michael Joseph Flaherty, B. A...	Brooklyn
	James Augustine Garvey, B. A.....	"
	Miles Joseph McManus, B. A.....	Plains, Pa.
	Rev. Joseph Paul McGinley, S. T. B...	Brooklyn
	James Edward Malone, B. A.....	Fall River, Mass.
	Michael Francis Murray, B. A.....	Hartford, Ct.
	Rev. Thomas Joseph O'Connor, B. A...	Muskegon, Mich.
	William Edward Sullivan, M. D.....	Brooklyn

## COLLEGE APPOINTMENTS

Valedictory, Francis J. Ulrich.....	Poughkeepsie
Salutatory, John J. Durick.....	Union street, Brooklyn
English oration, Thomas J. Loughlin....	Fall River, Mass.
Historical oration, Patrick A. Leahy ....	Brooklyn

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Excellence, freshman, Joseph V. Walsh.....	\$12
“      sophomore, John McSorley.....	14
Undergraduate honor, Bishop's medal, Louis Oliver Blaber	14
Ethics and classics, Edward Aloysius Holley .....	12
Oratory and mathematics, Francis Joseph Ulrich.....	14
Three scholarships each \$200, names of recipients not reported.	

## REQUIREMENTS FOR ADMISSION

(None reported)

## CLASSICAL COURSE

## FRESHMAN CLASS

English — Christian doctrine, Rhetoric (Quackenbos) Elocution, English, Literature, Modern history (Fredet)  
 Mathematics — Robinson's University, Geometry — Davies' Legendre, Plane Geometry, five books, Plane trigonometry, (Legendre)  
 Physics — Natural philosophy (Peck's Ganot), Chemistry (Steele)  
 Latin — Grammar reviewed, Sallust, Virgil, Prosody, Orations of Cicero and Latin prose composition (Arnold)  
 Greek — Grammar continued, Homer, Anabasis, and Arnold's Greek composition  
 French — Fausquelle's Dumas' Napoleon and manual of French conversation, Fausquelle's Larger course  
 German — Glaubenske's Synthetic German grammar — Schiller

## SOPHOMORE CLASS

English — Christian doctrine, Rhetoric — General principles of style; Standard of taste, Criticism, Essays, Debates and poetry; Modern history completed, Literature continued  
 Mathematics — Davies' Legendre, solid and spheric geometry, Trigonometry, analytic and spheric (Greenleaf completed), Algebra (Robinson's University), surveying (Gummere), theoretical and practical  
 Physics — Natural philosophy, Peck's Ganot completed; Chemistry, Steele's course completed; Physiology and botany (Steele)  
 Latin — Cicero's orations, De officiis, Virgil and Arnold's prose composition, Cresserly's Prosody  
 Greek — Arnold's composition, Demosthenes, Olynthiacs, St John Chrysostom  
 French — L'Histoire universelle de Bossuet, Howard's Aids to French Composition, Fausquelle's course completed  
 German — Schiller continued, Scripture history

## JUNIOR CLASS

English — Church history, Elocution, Blair's lectures, Essays, Debates, Literature  
 Physics — Chemistry, Physiology, Botany, Geology, Lectures  
 Mathematics — Geometry — Davies' Analytic geometry, Algebra — University completed  
 Latin — Livy, Horace, Cicero de oratore, Arnold's prose composition, Cresserly's prosody  
 Logic — Parts 1, 2 and 3 Logic, Praelectiones philosophicae  
 Greek — Demosthenes de corona, Euripides, Hecuba  
 French — Fausquelle's Racine, Sermons of Massillon ad mentem S. Thomae Aquinatis, Auctore, Zigliara, Parts 1 and 2 anthropologia

## SENIOR CLASS

Metaphysics and ethics — Metaphysica generalis et specialis, Ethica generalis et specialis; Zigliara  
 Mathematics — Analytic geometry completed, Calculus (Davies) differential and integral  
 Physics — Chemistry, Physiology, Zoology, Geology, Lectures  
 Latin — Tactilus, Plautus, Juvenal, Persius, Arnold's prose composition, Cresserly's prosody  
 Greek — Sophocles, Edipus tyrannus, Thucydides  
 English Literature — Shaw  
 Principles of eloquence

## COMMERCIAL COURSE

## FOURTH COMMERCIAL

English — Christian doctrine (De Harbes), Composition, (Quackenbos) Brown's Grammar, First lines and exercises, Geography, excelsior no. 3 commenced, Fifth reader, Excelsior series completed, Elocution, History (Excelsior), U. S.  
 Arithmetic — Thompson's Practical, Intellectual (Brooks)  
 Book-keeping  
 Penmanship  
 German — Dr Henn's First course  
 Music and drawing — Optional

## THIRD COMMERCIAL

English — Christian doctrine (De Harbes continued), Explanations by the teacher, Grammar, Brown's institutes commenced, Composition, Quackenbos First lessons completed, Essays once a week, Elocution, History, Excelsior complete, Geography, Excelsior no. 3 continued  
 Natural philosophy — Steele commenced  
 Arithmetic — Thompson's Practical, Brooks' Intellectual continued  
 Book-keeping  
 Writing  
 Algebra  
 Geometry — Brooks' Elementary, two books  
 German — Dr Henn's Course continued  
 Music and drawing — Optional

## SECOND COMMERCIAL

English — Christian doctrine, (De Harbes continued,) Grammar, Brown's Institutes continued, Rhetoric, Quackenbos commenced, Essay writing continued, Elocution  
 Astronomy — Kiddle's Course  
 Natural philosophy — Steele continued  
 Chemistry — Steele commenced  
 Phonography — Pitman  
 Book-keeping  
 Penmanship — Spencerian system  
 Geometry — Plane (Brooks)  
 Algebra  
 Arithmetic — Brooks, Practical and Intellectual  
 Mensuration — Todhunter commenced  
 German — Oelschlager's Second course  
 Music and drawing — Optional  
 English — Christian doctrine, De Harbe commenced, Rhetoric, Quackenbos completed, Dissertations and debates  
 Book-keeping  
 Arithmetic — Brooks' High school complete  
 Algebra — Robinson's Elementary completed  
 Geometry — Brooks, completed  
 Trigonometry — Plane and analytic (Brooks)  
 Mensuration — Todhunter complete  
 Phonography — Pitman  
 Natural philosophy — Steele completed  
 Chemistry — Steele completed  
 Astronomy — Kiddle completed  
 German — Oelschlager continued  
 Drawing and Music — Optional



## REQUIREMENTS FOR GRADUATION

The degree of B. A. is conferred at the end of the classical course ; diplomas are given at the end of the commercial course.

## BUILDINGS

Main building, three story brick, built 1868-72, floor area 14,400 sq. ft., 20 class rooms, 350 seats, value \$40,000. Chapel floor area 2,475 sq. ft. Dormitory 4,950 sq. ft. Class room building, four story brick, built 1850, floor area 27,000 sq. ft., 10 class rooms 100 seats, value \$28,000. Library in class room building, floor area 800 sq. ft. Museum in main building, gymnasium in main building, floor area 2,475 sq. ft. Other buildings at Centersport, three story wood, built 1880, floor area 11,250 sq. ft., value \$9,000. St Leonard's Academy, three story brick, floor area 9,000 sq. ft., value \$15,000.

## ELMIRA COLLEGE

*Elmira*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1852	Legislature chartered Auburn Female Seminary.
	1853	Transferred to Elmira. Legislature amended charter and changed name to Elmira Collegiate Seminary.
13 Ap	1855	Legislature chartered Elmira Female College. Purpose, the higher education of women with same standards for graduation as colleges for men. Claims to be first college in America to have accomplished this end.
		College placed under supervision of Presbyterian Synod of Geneva.
6 O	1890	Supreme court of Elmira changed name to Elmira College.
		Board of Trustees voted to abolish preparatory department by progressive discontinuation of classes.

## TRUSTEES

Elected

1887	President, Rev. Isaac Jennings, D. D.....	Elmira
1888	Treasurer and Secretary, N. P. Fassett.....	"
1887	Rev. Augustus Cowles, D. D., LL. D.....	"
1887	Rev. George C. Curtis, D. D.....	Rochester
1887	Edward P. Durant.....	Albany
1887	Helen M. McWilliams, B. A.....	Brooklyn
1887	Rev. William A. Niles, D. D.....	Hornellsville
1887	Rev. Evert Van Slyck.....	Catskill
1888	Hon. Seymour Dexter.....	Elmira
1888	Hon. John I. Nicks.....	"
1888	Rev. Wilson Phrauer.....	Sing Sing
1888	Anna B. Pratt, B. A.....	Elmira
1888	Hon. John S. Rathbun.....	"
1889	Gen. Alexander S. Dwen.....	"
1889	Francis Hall.....	"
1889	Rev. George H. McKnight.....	"
1889	Daniel R. Pratt.....	"
1889	Rev. J. Lovejoy Robertson.....	Cortland
1889	Helen B. Turner, B. A.....	Elmira

## ADMINISTRATION

Figures in column at left give first year of service in Elmira.

1889 <sup>1</sup>President, Rev. Charles Van Norden, D. D.

B. A. Hamilton, 1863; D. D. University of the city of New York,  
1887; Member English Society of Psychological Research; Author  
The outermost rim and beyond, 1882.

1885 Lady principal, Sara L. Chapman, M. A.

Educated at Lake Erie Seminary.

Treasurer, N. P. Fassett.

Matron, Mrs Elizabeth E. Hall.

Registrar, Phœbus H. Lyon.

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<sup>1</sup>Assumed charge 3 F 1890. Rev. Wilson Phraner, D. D., acted as president from the beginning of the year until failure of health, when Dr Cowles resumed control until above date.

## INSTRUCTION

Figures in column at left give first year of service in Elmira and years spent in teaching.

- 1889 Rev. Charles Van Norden, D. D. President and Professor of Biology and Physiological Psychology.

See also "Administration."

- 1856 Rev. Augustus W. Cowles, D. D., LL. D. President Emeritus,  
36 Professor of Psychology, Christian Evidences and Æsthetics.

B. A. Union 1841, M. A. 1844; D. D. Ingham University 1858;  
LL. D. Hamilton 1887; Member Victoria Institute.

- 1863 Rev. Darius R. Ford, M. A., D. D. Professor of Physical  
36 Sciences and Higher Mathematics.

B. A. Brown University; M. A., D. D. Alfred University Professor of Greek, Alfred University, 1852-63; Member National Association of Microscopy; Associate Member English Society for Psychical Research.

- 1885 Sara L. Chapman, M. A. Professor of Ethics and English  
25 Literature.

See also "Administration."

- 1885 Frances Pellett, B. A. Professor of Greek, History and  
5 Physical Culture.

Educated at Smith.

- 1886 Cornelia P. Dwight. Assistant Professor of Physical  
12 Sciences and Mathematics.

Educated at Englewood Institute.

- 1886 Emma K. Clark, B. A. Professor of Latin Language and  
14 Literature.

Ellen C. Pierson, Professor of German.

Educated at Vassar.

- 1887 Angeline Aspinwall. Professor of Piano Instruction.

3 Educated at Berlin.

- 1887 Margaret R. Wiseman. Professor of French Language and  
8 Literature.

Professor French language and literature, Sandusky, O.  
1882-3; Professor French and German, Young Ladies' Insti-  
tute, Charlotte, N. C. 1883-5; Sanoun School of Languages,  
Philadelphia 1885-7.

- 1869 Catherine M. Bacon. Professor of Drawing and Painting.

22 Educated at Cooper Institute.

- 1883 Edward Dickinson, M. A. Director of Musical Department  
11 and Professor of Piano Playing.

Educated at Amherst and Berlin.

- 1886 John B. Marsh. Professor of Vocal Culture, Organ,  
41 Harmony and Composition.

Professor of vocal music, Albany Female Seminary 1864-74;  
Professor of vocal music, Albany State Normal School 1869-86.

- 1890 Mark C. Baker. Professor of Vocal Music.

16 Educated at Leipsic.

- 1870 George W. Waters. Director of Art Department and Pro-  
25 fessor of Drawing and Painting.

Member of N. Y. Art Guild and Art Union.

- 1887 Lottie Niles, M. A. Professor of Rhetoric and Elocution.

8 B. A. Elmira College 1881, M. A. 1889; Preceptress Franklin  
Academy, Prattsburgh 1881-2; Teacher Hornellsville public  
schools 1882-6; Teacher public schools, Jacksboro, Tex.  
1883-4.

- 1890 John C. Bostelman. Professor of Violin Playing and  
Harmony.

#### VACANCIES

- 1856 Augustus W. Cowles, D. D., LL. D. President. Resigned  
36 3 F 1890.

- 1889 Wilson Phraner, D. D. President. Resigned.

- 1886 John B. Marsh. Professor of vocal music.

#### APPOINTED DURING YEAR

Wilson Phraner, D. D. President. Elected Mr 1889.

Charles Van Norden, D. D. President. Elected D 1889.

Augustus W. Cowles, D. D., LL. D. Professor of psychology,  
Christian evidences and æsthetics.

Mark C. Baker. Professor of vocal music. Elected Mr 1890.

John C. Bostelman. Professor of violin playing and harmony.



HONORARY DEGREES

(None)

COLLEGE APPOINTMENTS

Valedictory, Rachel Eliza Tolles.....	Attica N. Y.
Salutatory, Jennie Hulburd Pratt.....	Monroe, Mich.

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Hall prize for excellence in English composition,	
Harriet D. Pratt, Elmira .....	Value \$25

REQUIREMENTS FOR ADMISSION

See table 2.

COURSES OF STUDY

Instruction in the classical languages involves a careful study of the mythology, history and social customs suggested by the text; that the student may, as far as possible, enter into the spirit of the classic age. The lives of authors are studied in connection with their works, and both Greek and Latin literature systematically pursued.

Instruction in the modern languages purposes to teach students not only to read and translate at sight, and to speak and write fluently and correctly, but also to think in the language studied. All class exercises are conducted in the language taught.

The contemporary history is studied in connection with the works of each author. Throughout the course special instruction is given in the history, development and idiomatic construction of each language, with special attention to comparative grammar.

The study of the English language and literature is continuous throughout the course. In this department a theoretic knowledge of the laws of thought in expression is inculcated; and care is taken to develop in the student facility and power in the use of the mother tongue. The general reading of the students is guided and the use of works of reference explained and directed. Independent criticism and discussion of works considered are encouraged.

In the study of history courses of reading on prominent characters and events in the different epochs are marked out, and oral and written reports are required. Attention is particularly directed to the true methods of historical research. The historic progress of civilization and the development of political institutions and ideas are considered, and the mutual bearings and influence of the history of a period on its literature and art.

The course in mathematics comprises the following branches: Higher algebra, plane, solid and spheric geometry; trigonometry, plane, analytic and spheric, with applications to navigation and surveying; analytic geometry, calculus, astronomy and verifications in the observatory.

The course in physical science includes botany, zoology, physiology and hygiene, physics, chemistry, geology, biology and astronomy. In the freshman year a short elementary survey of the sciences is given by lectures. In zoology an outline of the theories of classification is followed by work in the study of birds and insects in the museum. Geology is taught by lecture, text-book, specimens and occasional field work, and is further illustrated by lantern projections, models, maps and casts of the representative fossils of each era. In physics the time is divided between recitation and laboratory work. Students are expected to verify in the laboratory the leading facts and principles by their own experiments. The course in chemistry includes a rapid survey of the elements, the nomenclature and the formation of compounds. A few lectures in household chemistry treat of foods, drinks, adulteration, ventilation, etc. Arrangements are satisfactory for corresponding work in the chemical laboratory by the students themselves. In astronomy the text-book is Young's College astronomy. Instruction in botany relates, at first, to plant life, growth, morphology and classification. Fieldwork and a collection of American native plants render this study practical. In the senior year one semester is devoted to biology on the line of Bessey's Advanced course in botany, and a close study is made of life, growth and evolution of forms, with aid of the microscope. Physiology is taught by text-book and the use of the human skeleton and a large Auzuox dissecting manikin.

In mental and moral philosophy text-books are supplemented by lectures on ancient, medieval and modern schools of thought. Psychology is approached from both the old and the new stand-

point, and is viewed through the physiological no less than through the metaphysical atmosphere. While all rightful importance is attached to ancient speculations the discoveries of modern science in mental physiology are not ignored.

Christian evidences receive careful and extended consideration, as do also Ethnic religions, pantheism, deism and theism in their relations to Christianity.

#### SPECIAL STUDENTS

All departments, under general regulations, are open to the use and enjoyment of any who desire to pursue special studies; with the understanding, however, that no degree shall be asked at the completion of the preferred work, and that the college will give no guarantee of attainments beyond a statement, by the president, certifying to the actual facts. It is, moreover, provided that in case of selection from branches of the regular course, such special students shall be at least 16 years of age, and that their previous education and present circumstances permit them, in the judgment of the faculty, to pursue, with advantage to themselves and to their mates, the studies preferred.

Facilities will be afforded teachers, so using the privileges of the college, to acquaint themselves with the methods of study pursued in each department.

## FRESHMAN YEAR

## SOPHOMORE YEAR

Hours per week		Hours per week	
<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
3	Latin—Livy	3	Latin—Horace, Odes, and Ars poetica
4	Mathematics—Algebra completed	4	Mathematics—Geometry completed
3	Man's Place in Nature—Lectures Introductory to the Sciences	3	Natural history—Recitations and lectures
1	History—Grecian history to the fall of the empire of Alexander	1	History—Roman history to the dissolution of the western empire
1	English literature—Literature of the 19th century with critical readings	1	English literature—Critical study of authors
1	Rhetoric—Abbott's How to write clearly; Essential elements of narration and description; Six themes	1	Rhetoric—The study of synonyms; Words defined by usage and by derivation; Welch's Complete rhetoric; Six themes
3	Greek—Homer's Odyssey; Greek testament; Greek prose composition	3	Greek—Xenophon's Memorabilia; Greek testament continued; Readings from the most important authors of that century; Composition and criticism
3	French—Fleury's Histoire de la littérature Française sixième époque; Readings from authors of that period; Translation and composition and grammatical criticism	3	German—Schiller, Wallenstein's Lager, Piccolomini und Wallenstein's Tod; Geschichte der Deutschen national-litteratur von Kluge
3	German—Noveletten bibliothek, von Bernhardt; Goethe, Hermann und Dorothea; Geschichte der Deutschen national-litteratur von Kluge; Poems by favorite German authors; English into German; Essays	1	Elocution
<b>FIRST SEMESTER</b>		<b>SECOND SEMESTER</b>	
4	Mathematics—Plane and spheric trigonometry, with application to navigation and surveying	3	Botany—Gray's School and field book of botany; Structural and microscopical botany; Lectures on vegetable physiology
1	History—Jewish and oriental history with ancient geography	1	History—Medieval history from the fall of the western empire to the renaissance, and study of medieval institutions and civilization
1	English literature—Outlines of literature in the 17th century; Special study of Chaucer	1	English literature—Elizabethan era; Special study of Spenser
1	Rhetoric—D. J. Hill's Science of rhetoric; Six themes	1	Rhetoric—Hill's Science of rhetoric; Six themes
3	Physiology	4	Physics—Laboratory work
3	Latin—Cicero, De amicitia and De senectute; Roman literature	3	Latin—Tacitus, Agricola; Horace, Satires and epistles; Roman literature
3	Greek—Plato's Apology and Crito; Greek testament	3	Greek—Demosthenes De corona
3	French—Demogeot, Litterature Française, Histoire des révolutions, Histoire de France; Aperçu général, classical drama	3	French—Demogeot, Litterature, concluded; Le siècle de Louis 14; Classical drama
3	German—Lessing, Minna von Barnhelm or Emilia Galotti; Important events in German history; Miscellaneous exercises; Selections from modern authors; Essays	3	German—Goethe, Faust; Historical epochs continued
		1	Elocution



JUNIOR YEAR		SENIOR YEAR	
Hours per week		Hours per week	
FIRST SEMESTER			
4	Psychology — McCosh	3	Physiological psychology
4	Chemistry — Laboratory practice; Experimental lectures	3	History of Philosophy — Schwegler
1	History — General history of Europe, through the reformation and the renaissance	3	Classical and Foreign Literature
1	English Literature — Special study of Milton	5	Astronomy — With use of observatory and instruments
1	Rhetoric — Construction of sentences and paragraphs; exercises in verbal criticisms; Trench on the Study of words, revised by Rev. A. L. Mayhew; Four themes	1	History — History of the 19th century; Changes and development in political and social life and methods of government
3	Latin — Juvenal, Plautus; Special study of the satire	1	English literature — Shakspeare; Study of dramatic art
3	Greek — Selections from the Greek lyric poets; Greek testament	1	Rhetoric — In its relations to ethics, logic, esthetics and the higher forms of literature
3	French — La littérature Française du 18e siècle par Paul Albert; Readings; Lectures	3	Logic — McCosh's or Hill's Jevons' Logic
3	German — Lessing Nathan der Weise; Selections from modern authors; Essays	1	Greek
1	Elocution	1	Elocution
		1	Anthropology
SECOND SEMESTER			
3	Political economy	3	Biology
2	Mathematics — Analytic geometry; Calculus	3	Christian Evidences and Church History
4	Geology	3	Art history and Criticism — Architecture, sculpture and painting
1	History — General history of Europe, from the Elizabethan age to the French revolution; History of political and religious institutions and ideas	4	Ethics — Essays and Discussions on practical and theoretical ethics
1	English literature — Literature of the 18th century; the essayists	1	Astronomy — With use of observatory and instruments
1	Rhetoric — Trench on the Study of words; Four themes	1	English literature — Study of representative authors
3	Latin — Cicero, De oratore	1	Class Debate
3	Greek — Aeschylus, Prometheus	1	Greek
3	French — Littérature Française du 19e siècle par Paul Albert; Selections from contemporary authors	1	German
3	German — Ballads by Goethe and Schiller; Goethe, Imigiente; Selections from modern German poets	1	French
1	Elocution		
3	Domestic chemistry		

### Course of music

Public and private concerts by the musical faculty and students are frequently given, to enable the latter to hear other pieces than those they are studying, and also to receive the benefit that comes from performance with and before other musicians.

Ensemble classes afford advanced students the opportunity of playing in concerted piano works, and also of practising with the violin and other instruments.

Recitals and concerts by famous performers are arranged from time to time, and they are open to the school of music free of charge.

Advantages are offered to those who wish to become good church organists. The course involves not only the most advanced solo playing, but also instruction in choir accompaniment and direction from teachers of practical experience in those departments.

A choral class meets once each week under the direction of the professor of vocal culture, for the study and performance of choruses and part songs.

While the study of the theory of music is not yet compulsory, the necessity of some knowledge of harmony is so obvious that every student is strongly urged to devote at least one year to this branch.

### Course of study for the violin

The elementary methods employed at the Paris and Leipsic conservatories, viz.: Rode, Kreutzer and Baillot's school; Alard's and De Beriot's methods; David's and Spohr's schools; 36 Etudes for those who wish to prepare themselves for the celebrated Kreutzer Etudes and Fiorillo's Caprices; Pleyel's violin duets; Maza's violin duets; *Airs varies* by Dancsa for violin and piano; easy fantasies on operatic themes by Alard, for violin and piano; Kreutzer's Etudes; Schradieck's technical studies; the violin and piano sonatas of Haydn, Mozart, Beethoven and Schubert; Concertos of Rode, Viotti, Spohr, DeBeriot, Mendelssohn, etc.; Viotti's violin duets; ensemble music arranged for four hands, piano and violin, (*cello ad lib.*); Beethoven's symphony, no. 1-8; Schubert's unfinished symphony, and according to the aptitude of the pupil, such progressive studies and selections from orchestral scores of the classic and modern masters as are best suited to the temperament and conception of the advanced student.

## HARMONY

Complete instruction offered in the theory of music, based on the works of Richter and Bussler. This course is offered and urged with a view to enable not only the musical students but also the general students — the listener as well as the performer — to have a proper appreciation of tonal structure; to judge by the eye as well as by the ear, of the merits or demerits of a composition.

**Course of study for the piano***First grade*

## ETUDES

Technical studies by Kullak, Emery, Plaidy, Riemann, Zwintscher; Koehler's Op. 50; Loeschhorn's Op. 65 and 52; Bertini's Op. 100; Duvernoy's Etudes de mecanisme; Heller's Op. 47; Czerny's Op. 849; Loeschhorn's Op. 66, Part 1.

## PIECES

Sonatinas by Clementi, Kuhlau, Reinecke, Gurlitt, Merkel and others; easy sonatas, rondos, variations, etc., by Haydn, Mozart, Beethoven, Hummel and Dussek: Songs without words by Mendelssohn; salon pieces by the best modern composers.

*Second grade*

## ETUDES

Exercises by Plaidy, Zwintscher, Mason; Czerny's Op. 299, two books; Loeschhorn's Op. 66, books 2 and 3; Krause's Op. 2, 5 and 9; Hellers' Op. 46 and 45; Doering's Octave studies; Bach's two-part inventions.

## PIECES

Sonatas by Hadyn and Mozart; Beethoven's Sonatas, Op. 2, No. 1; Op. 14, Nos. 1 and 2; Rondos in C and G; Songs without words and caprices by Mendelssohn; Field's Nocturnes; Impromptus and Momens musicales by Schubert; easier Mazurkas, preludes and waltzes by Chopin; pieces of moderate difficulty by Schuman, Gade, Henselt, Jensen, Kirchner, Heller, Godard and other modern writers.

*Third grade*

## ETUDES

Czerny's Daily studies; Op. 740 and 355; Cramer's Etudes (Buelow) bks. 1 and 2; selections from Clementi's Gradus ad Parnassum (Tausig); Krause's Op. 15; Moscheles' Op. 70, Book I; Kullack's Octave school.

## PIECES

Suites and preludes by Bach ; Mozart's Fantasies ; Beethoven's Sonatas, Op. 10, No. 3 ; Op. 13 ; Op. 26 ; Op. 27, No. 1 ; Op. 22 ; Op. 7 ; Op. 28 ; selections from the works of Weber, Schumann, Chopin, Rheinberger, Mendelssohn, Raff, Rubinstein, Grieg, Tschaikowsky and other romantic composers ; four-hand, ensemble and concert playing.

*Fourth grade*

## ETUDES

Technical exercises by Tausig ; Czerny's Op. 335 and 365 ; Reinecke's Op. 121 ; Blodgett's Op. 20 ; Chopin's Op. 10 and 25 ; Henselt's Op. 2 and 5.

## PIECES

Preludes and fugues by Bach ; Beethoven's Sonatas, Op. 27, No. 2 ; Op. 31, Nos. 1, 2 and 3 ; Op. 53 ; Op. 57 ; Op. 81 ; Op. 90 ; Concertos, Nos. 1, 3 and 4 ; Mendelssohn's Concerto's ; Hummel's Concerto in A flat ; Ballades, scherzi, polonaises and impromptus by Chopin ; difficult works by Schumann, Rubinstein, Saint-Saens, Raff, Moszkowski, Scharwenka, Nicode and others, ending with selections from the Rhapsodies and fantasies of Liszt ; ensemble and concert playing.

**Course of study for the organ***First grade*

Manual studies in two, three and four parts, by Thayer, Lemmens, Guilmant, Ritter and others ; beginning of pedal playing with studies by Thayer, Whiting Rinck ; easy pieces by composers of the German, French and English schools ; fundamental principles of registration.

*Second grade*

Choral preludes by Bach, Merkel and others ; Buck's studies in pedal phrasing ; easier preludes and fugues by Bach : moderately difficult pieces by Hesse, Merkel, Wely, Guilmant, Batiste, Smart and others ; transcriptions by Best.

*Third grade*

Haendel's Concertos ; Mendelssohn's second Sonata ; Preludes, fugues and Choral vorspiele by Bach ; concert pieces by the best German, French and English masters ; registration and choir accompaniment.



*Fourth grade*

Preludes, fugues and toccatas by Bach; Merkel's Sonatas; Thieles Chromatic fantasie and fugue; Rheinberger's Sonatas; difficult concert pieces and transcriptions by Lemmens, Guilmant, Widor, Saint-Saens, Best, Whiting and Eddy.

**Course of study in vocal culture***First grade*

Technical drill; sight reading; elementary studies of Sieber, Concone, Marchesi; simple songs.

*Second grade*

Technical drill; sight reading; advanced studies of Concone, Garcia, Lutgen, Bonoldi; songs by the best composers; simple scenas and arias from operas, cantatas and oratorios.

*Third grade*

Technical drill; sight reading; studies of Lamperti, Panofka, Mazzoni, Rossini; songs of Schubert, Schumann, Mendelssohn, Franz; larger selections from operas and oratorios.

*Fourth grade*

Technical drill; sight reading; difficult concerted pieces; songs by all composers, classic and modern.

**Course in art**

The department is in charge of an artist experienced in landscape, portrait and figure work — in oil, water colors and crayon.

Among the selections of classic and modern statuary in the studios are full-sized busts of the Apollo Belvidere, Diana, Venus de Milo, Julius de Medici (by Michael Angelo), Venus de Medici, Thorwaldsen's Mercury and Eve, Clytie, and full-length reductions of Flora, Venus de Milo, Pomona, a torso of the Laocoon, with colossal busts of Bacchus, and Ariadne. These and other standard models in the Round furnish superior means for a good foundation in the study of art.

For such students as desire to become professionals or to fit themselves for systematic and successful instruction in drawing and painting the following course is provided:

*First year*

Charcoal drawing in outline from solid geometric forms and portions of the human figure, with elements of perspective, until perfect control over hand and eye is secured.

*Second year*

Drawing in charcoal and crayon, from the antique, heads, busts, and full figure in outline. Modeling in coal, crayon and oil.

*Third year*

Drawing in charcoal and crayon, and manipulation of color, from still life subjects. Studies in color combinations, draperies and other objects.

*Fourth year*

Composition, color in landscape, figures, heads and interior subjects. Application of all principles to open air sketching and painting in color.

The degree in music, *musicæ baccalaurea* (Mus. B.), is open to graduates of this, or of any other approved college, and to such as may produce certificates testifying to their use of at least five years in the study of music. Two examinations must be taken by every candidate, at an interval of not less than one year, the first covering harmony and counterpoint in not more than four parts, and canon and fugue in two parts, and the second embracing harmony and counterpoint in five parts, canon and fugue, musical form (analysis), history of music, and orchestration. Before the final examination the candidate will be required to submit for approval of the examiners a composition on a sacred or secular subject, containing some portion for a solo voice, some for a chorus for four parts using fugue treatment, and an accompaniment for piano, organ or a string band, said composition to occupy about 15 minutes in its performance.

Resident graduates, students in special courses, and pupils proficient in either of the departments of art, may receive from the president a certificate of the studies pursued.

## REQUIREMENTS FOR GRADUATION

Those students who satisfactorily complete the full classical course are entitled to the degree of bachelor of arts. Those who,—under limitations prescribed by the faculty—graduate with like proficiency in the department of science, are entitled to the degree of bachelor of science.

For degree of Mus. B. see under “Fourth year” above.

The degrees of master of arts and master of science are bestowed on those alumnæ of this or other colleges who furnish evidence of satisfactory progress in liberal studies during a period of not less than three years after graduation.

## BUILDINGS

Main building, five story brick, built 1853, floor area 63,245 sq. ft., nine class rooms, 200 seats, value \$100,000. Chapel in main building, floor area 3,920 sq. ft. Dormitory in main building, floor area 20,912 sq. ft. Class rooms in main building, floor area 1,054 sq. ft. Science rooms in main building, floor area about 1,054 sq. ft. Art rooms in main building, floor area about 1,000 sq. ft. Library in main building, floor area 1,450 sq. ft. Laboratory in main building, floor area 1,054 sq. ft. Observatory, two story wood, built 1861, floor area 7,644 sq. ft., one class room, 200 seats, value \$4,080. Museum in observatory, floor area 2,040 sq. ft. Gymnasium in main building, floor area 2,278 sq. ft. President's house, wood, floor area 3,200 sq. ft., value \$5,000.

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## INGHAM UNIVERSITY

*Le Roy*

CONSISTING OF

Collegiate Department

Academic Department

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1835	Marietta and Emily E. Ingham established Le Roy Female Seminary.
16 F	1841	Incorporated by regents.
6 Ap	1852	Legislature incorporated Ingham Collegiate Institute with power to establish normal department, seminary course of three years and collegiate department of two years additional.
28 Ja	1853	Regents admitted above institution to share in literature fund.

Month Year

3 Ap 1857 Legislature incorporated Ingham University. Academic department retained, continuing to share in literature fund.

Vacancies in board of trustees filled by presbyterian synod of Genesee, other Christian denominations entitled to representation.

1883 Emily E. Ingham Staunton transferred entire university property subject to life annuity to herself, to board of trustees, to be perpetually devoted to liberal education of young women.

## TRUSTEES

Elected

1883 President, Charles F. Prentice .....	Le Roy
1883 Treasurer, Butler Ward .....	"
1883 Secretary, William Lampson .....	"
1883 Hon. Augustus Frank .....	Warsaw
1883 Nicholas B. Keeney .....	Le Roy
1883 Hon. James H. Loomis .....	Attica
1883 Augustus E. Miller .....	Le Roy
1883 Hon. Henry N. Page .....	Perry
1883 Rev. Herman C. Riggs, D. D. ....	Binghamton
1883 Hon. Edward C. Walker .....	Batavia
1883 Rev. Edward B. Walsworth, D. D. ....	Livonia
1883 Schuyler C. Wells .....	Le Roy
1887 Rev. Samuel Bowden .....	"
1888 Rev. Amasa S. Freeman, D. D. ....	Haverstraw

## COLLEGIATE DEPARTMENT

*Le Roy*

## ADMINISTRATION

First year of service in Ingham not reported.

Chancellor, Rev. W. W. Totheroh, D. D.

Director of College of Music, Florence L. Beach.

Director of College of Fine Arts, Rose M. Shaw.

Lady Principal, R. N. Webster.

Secretary and Registrar, Edith M. Innis.

Matron, Mrs Sarah A. Innis.



## INSTRUCTION

First year of service in Ingham and years spent in teaching not reported.

Principal R. N. Webster, Rhetoric and Literature.

Mrs Lucy A. S. Parsons, Mental and Moral Science and History.

Ella M. Arnold, B. A. Latin and Greek.

Calista McCauley, B. S. (Wellesley). Natural Sciences and Mathematics.

Auguste Harkort. French and German.

Jennie Dauman. Assistant in English.

May Louise Perry. Elocution.

Florence L. Beach. Piano, Harmony.

Edith M. Innis. Piano.

Mrs. R. W. Bellamy. Vocal Culture.

Herman Dossenbach. Violin.

Jean H. Ward. Assistant in college of fine arts.

Harriet I. Ballintine. (Sargent's School, Boston). Physical Training.

## VACANCIES

Dr E. Ballintine. Resigned.

C. McPherson, Elmira College. Resigned.

Mary Pomeroy, St Agnes'. Resigned.

## APPOINTED DURING YEAR

Harriet I. Ballintine.

Calista McCauley, B. S.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Jessie R. Phinney..... New York

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Scholarship, Annie Hall, Westfield .....	\$25

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

The college provides two courses of study, in both of which the prescribed and elective systems are combined. A reasonable degree of liberty is allowed in the choice of those studies which are made elective, but all elections are subject to the approval of the faculty. The minimum requirement, including electives, is, as a rule, an equivalent of three full studies daily.

The regular college course, while it includes the studies usually prescribed by the colleges of our land, gives special prominence to the English language and literature. Two languages, one of which must be Latin, are required. The second language may be Greek, French or German.

The special college course substitutes the modern for the ancient languages and makes mathematics elective after the first term of the first year.

Post graduate courses of study will be arranged for such resident graduates as wish to take examinations for the degree of master of arts.

## REGULAR COURSE

FRESHMAN YEAR	SOPHOMORE YEAR
FIRST TERM	SECOND TERM
<p>Latin — Livy, Prose composition  Greek — Xenophon's Memorabilia, Plato's Apology, Prose composition  German — Grammar, Anschauungs-Unterricht, Selections from classics,  dictation  French — Grammaire pour les Anglais, Sauveur's Causeries avec mes  clevés, Selections from classics, dictation  Mathematics — Wells' Advanced algebra  History — Grecian and Roman  English composition  Biblical study</p>	<p>Latin — Cicero's De oratore, prose composition, Horace  French — French literature to the 19th century, composition, dictation,  selections from classics  Mathematics — Wentworth's Plane and spheric trigonometry  Chemistry  Political economy  English composition  Biblical study</p>
SECOND TERM	FIRST TERM
<p>Latin — Horace  Greek — Homer's Iliad and Odyssey, selections  German — Grammar, Anschauungs-Unterricht, Selections from classics,  dictation, composition  French — Selections from classics, French literature, dictation, grammar  Mathematics — Wells' Solid geometry  English history  Biblical study</p>	<p>Greek — Herodotus, Plato's Apology, Demosthenes' Oration on the  crown  German — Selections from classics, German literature to Kloystock,  dictation, composition  History — Medieval and modern  Botany — Gray's Lessons  Political economy  English composition  Biblical study</p>

## REGULAR COURSE

JUNIOR YEAR	SENIOR YEAR
<p>FIRST TERM</p> <p>Latin — Tacitus, Agricola or Germania and Annales; Plautus, Captivi, Juvenal                      English Literature from the Keltic to the Augustan Period                      Advanced Rhetoric, Hill                      Physics — Dynamics, Electricity, Magnetism                      English composition                      Biblical study</p>	<p>FIRST TERM</p> <p>Latin — Cicero's De officiis; Lucretius, De natura rerum                      Mental philosophy, Hopkins                      German — Literature, Selections from the classics, Composition                      Geology — Dana                      Mineralogy — Dana's Manual illustrated by laboratory practice in the blow pipe determination of metals                      Biblical study</p>
<p>SECOND TERM</p> <p>Greek — Thucydides, Selections Sophocles Antigone, Eschylus Persians                      English literature from the Augustan Period to the present time                      Logic — Jevons                      Physics — Heat, sound and light                      History and literature of art                      English composition                      Biblical study</p>	<p>SECOND TERM</p> <p>Moral philosophy — Fairchild                      Continental literature — French, Spanish, Italian and German                      Astronomy — Young                      Anglo-Saxon — Gilmore                      French — Literature, Composition, Selections from classics                      Biblical study</p>



## SPECIAL COURSE

FIRST YEAR — FIRST TERM  
German, French, history and mathematics as in regular course (freshman)  
Political economy  
English composition  
Biblical study

SECOND TERM  
French, German, history and mathematics as in regular course (freshman)  
Botany—Shepherd  
English composition  
Biblical study

MIDDLE YEAR — FIRST TERM  
French—as regular course (sophomore)  
English literature  
Chemistry—Gage's with laboratory practice  
English composition  
Biblical study

SECOND TERM  
German and history as in regular course (sophomore)  
English literature  
Geology—Dana  
Logic—Jevons'  
English composition  
Biblical study

SENIOR YEAR — FIRST TERM  
German, mental philosophy, mineralogy and geology as in regular course (senior)  
Physics—Gage's dynamics, electricity, magnetism  
Biblical study

SECOND TERM  
Moral philosophy, continental literature, astronomy, French and Anglo-Saxon as in regular course (senior)  
Physics—Heat, sound and light  
Biblical study

## COURSE IN ELOCUTION

## JUNIOR YEAR

Elocution—General theory and practice  
Literature—Extracts from works of leading authors read and analyzed with reference to their rhetorical structure  
Rhetoric—Subject studied rather than text-books  
Composition—Special attention given to all kinds of epistolary correspondence, letters of business, congratulation, invitation, etc. Weekly drill  
Logic—Intellect trained to habits of original thought  
Shakspeare—Critical study of plays

## SENIOR YEAR

Elocution—Higher phases  
Literature—Historical study of ancient and modern orators and poets  
Rhetoric—Criticism and application of principles to original matter  
Mental science  
Shakspeare—Critical analysis of three plays, covering the ground of comedy, tragedy and history

PIANO COURSE	VOCAL COURSE	VIOLIN COURSE
<p>Finger exercises — Germer techniques, Czerny octaves;                      Etudes — Czerny                      Literature — Beethoven and other masters                      Ensemble — Duets and quartettes                      Scientific — Tonality                      Language — German, French</p>	<p>FRESHMAN YEAR</p> <p>Respiratory exercises                      Tone — Practice                      Etudes — Concone, vaccai                      Literature — English ballads                      Ensemble — Duets, two voices</p>	<p>Etudes — De Beriot's school, bk. 1                      Tone — Vocal lessons                      Scientific — Tonality                      Ensemble — Duets with piano</p>
<p>Finger exercises — Germer octaves and Low-octaves                      Etudes — Czerny-op. 740                      Fugue — Two-voiced inventions                      Literature — Beethoven and other masters                      Ensemble — Duets with violin, etc.                      Scientific — English literature, history of music                      Tone — Thalberg's Art du Chant                      Language — German and French</p>	<p>SOPHOMORE YEAR</p> <p>Respiratory exercises                      Tone — Advanced cultivation of tone                      Etudes — Marchesi                      Literature — French and Italian masters                      Ensemble — Voice and violin</p>	<p>Etudes — De Beriot's school, bk. 2                      Literature — Vocal transcriptions, classic pieces                      Tone — Vocal lessons                      Scientific — Music history                      Ensemble — Duets, two violins</p>
<p>Finger exercises — Germer techniques, Doering's octaves                      Etudes — Cramer                      Fugue — Suites of Bach and of Handel                      Literature — Beethoven and other masters                      Ensemble — Duets with violin                      Scientific — Harmony, physiology                      Tone — Liszt's transcriptions                      Language — German and French</p>	<p>JUNIOR YEAR</p> <p>Respiratory exercises                      Advanced cultivation of tone                      Etudes — Marchesi and Panofka                      Literature — German and classic masters                      Ensemble — Part songs, trios, quartettes, etc.</p>	<p>Etudes — De Beriot's school, bk. 3; Dancila's etudes                      Literature — Classic masters                      Tone — Elocution and declamation                      Scientific — Harmony                      Ensemble — String trios</p>
<p>Finger exercises — Tausig's Ex., Schmitt's Ex., Kullak's octaves, Bk. 2, 3                      Etudes — Chopin, fugues, Gradus ad Parnassum                      Literature — Beethoven and other masters                      Ensemble — Duos with strings                      Scientific — Harmony and phrasing                      Tone — Liszt's transcriptions                      Language — German and French</p>	<p>SENIOR YEAR</p> <p>Respiratory exercises                      Advanced cultivation of tone                      Etudes — Lamperti and Bordogni                      Literature — Opera, oratorio                      Ensemble — Voice and string instruments</p>	<p>Etudes — Kreutzer's etudes; De Beriot's 12 airs                      Literature — Concertos by classic masters                      Scientific — Harmony                      Ensemble — String trios, quartettes, etc.</p>

### Course in fine arts

Instruction comprises study from life and still life, in the use of pencil, charcoal, crayon, india ink, sepia, pastel, water and oil colors.

The methods are those practiced in the best schools of art, drawing and painting from models of life and still life, sketching out of doors during the favorable season, with designing and composition of pictures.

The course is not limited in time, depending on results; but has an average of about three years.

Lectures are given embodying the principles of linear and aerial perspective, anatomical drawing, composition of pictures, chromatics; nature and qualities of pigments and vehicles, technicalities of painting, schools of art—their history and characteristics—together with general instruction of practical utility to the art student.

### REQUIREMENTS FOR GRADUATION

Graduates of the regular course receive the degree of bachelor of arts; a diploma is awarded on the completion of the special course. The degree of master of arts is conferred on examinations connected with post graduate courses of study.

#### REQUIREMENTS FOR GRADUATION IN THE FINE ART COURSE

1 Students must give proof of having obtained the principles of an English education.

2 Must pass an examination in the principles of art, as embodied in the lectures of the undergraduate course, and in such instructions as are given to students individually.

3 Must execute a crayon drawing in the highest style adopted in the department.

4 Must execute and present to the university a complete original picture, the materials for which have been studied from life or still life and composed in conformity to the requirements of art. If approved by the faculty and trustees, it will be accepted by them and given a permanent place in the collection of graduating pictures.

### BUILDINGS

Main building, three story wood, built 1835, seven class rooms, value \$20,000. Dormitory, two story brick and stone, built 1886, value \$15,000. Art building, two story stone, built 1876, value \$20,000. President's house, two story wood, value \$5,000.

## ADDITIONAL INFORMATION

A new brick and stone dormitory, elegantly furnished, and a gymnasium with complete apparatus, the gift of ladies of the alumnae, have been added during the year. Additions have been made to laboratory of philosophical and chemical apparatus.

## VASSAR COLLEGE

*Poughkeepsie*

## HISTORIC SKETCH

- Month Year For list of date abbreviations see p. 254.
- 18 Ja 1861 Legislature incorporated Vassar Female College.  
 "The founder, Matthew Vassar was allowed to give by his last will and testament, or otherwise, any portion of his estate, any existing statute to the contrary notwithstanding."
- 26 F 1861 First meeting of trustees. Mr Vassar expressed his hope "of founding and perpetuating an institution which shall accomplish for young women what our colleges are accomplishing for young men."
- 1865 First building completed.
- 1 F 1867 Legislature changed name to Vassar College.
- 1889 Alumnae Gymnasium erected. "Largest building for purposes of physical exercise connected with any college for women."
- O 1889 Vassar Students' Aid Society organized.

## TRUSTEES

Elected

- 1861 Chairman, Edward Lathrop, D. D. 51 W. 37 st., N. Y.
- 1885 Treasurer, Willard L. Dean . . . . . Poughkeepsie
- 1885 Secretary, Robert E. Taylor, M. A. "
- 1861 Augustus L. Allen . . . . . "
- 1861 Benson J. Lossing, LL. D . . . . . Dover Plains
- 1861 Ezekiel G. Robinson, D. D, LL. D., 3952 Pine st., Phila.
- 1861 Cyrus Swan, B. A . . . . . Poughkeepsie
- 1869 George Innis . . . . . "
- 1876 Gen. Frederick Townsend . . . . . 3 Elk st., Albany



## Elected

1878	Henry L. Young	Poughkeepsie
1881	John H. Deane	120 Broadway, N. Y.
1882	Joachim Elmendorf, D. D	61 E. 123 st., N. Y.
1882	Henry M. King, D. D.	Albany
1884	Augustus H. Strong, D. D.	Rochester
1885	Alanson J. Fox	61 Alfred st., Detroit
1885	Colgate Hoyt	Yonkers
1885	Duncan D. Parmly	160 Broadway, N. Y.
1885	Frederick F. Thompson, B. A	2 Wall st., N. Y.
1886	James M. Taylor, D. D	Poughkeepsie
1887	Helen H. Backus, M. A.	57 Livingston st., Bklyn
1887	Florence M. Cushing, B. A	8 Walnut st., Boston
1887	Elizabeth E. Poppleton, B. A	Omaha
1888	Edward Judson, D. D.	104 W. 19 st., N. Y.
1888	John D. Rockefeller	26 Broadway, N. Y.
1889	Albert S. Bickmore, Ph. D.	12 W. 41 st., N. Y.
1889	Allen W. Evarts, B. A.	52 Wall st. N. Y.
1889	Nathan E. Wood, D. D.	54 Strong pl., Bklyn

## APPOINTED DURING YEAR

1890	James M. Bruce, B. A.	309 W. 83 st., N. Y.
1890	Samuel D. Coykendall	Rondout

## VACANCIES

J. Ryland Kendrick, D. D., Poughkeepsie, died 11 D 1889  
 Rezin A. Wight, New York, died 6 Ja 1890

## ADMINISTRATION

Figures in column at left give first year of service in Vassar.

1886 President, James M. Taylor, D. D.

B. A. University of Rochester 1868, D. D. 1886; Member  
 American Economic Association; Member of Council of  
 American Society for the Extension of University Education.

1881 Lady Principal, Abby F. Goodsell, B. A.

B. A. Vassar 1869; Teacher, Vassar 1871-7; Lady principal and  
 teacher, Wilson College 1877-81.

Treasurer, Willard L. Dean.

1881 Secretary, Mary W. Whitney, M. A.

B. A. Vassar 1868, M. A. 1872; Assistant in Vassar Observatory  
 1881-8.

1866 Librarian, Frances A. Wood.

Principal of girls' school, Adams, Mass. 1862; Teacher English branches, Pittsfield High School 1863; Teacher of English, Maplewood Institute 1864; Teacher of music, Rutgers Institute 1865; Teacher of music, Vassar 1866; Teacher of English, Vassar 1870; Librarian, Vassar 1880 —.

1885 Secretary to the President, Ella McCaleb, B. A.

B. A. Vassar 1878; Teacher, Clifton Springs 1878-81; Detroit, 1881-5.

### INSTRUCTION

Figures in column at left give first year of service in Vassar and years spent in teaching.

1886 James M. Taylor, D. D. President and Professor of Mental  
4 and Moral Philosophy.

See also "Administration."

1874 Le Roy C. Cooley, Ph. D. Matthew Vassar, jr Professor  
33 of Physics and Chemistry. 2 Reservoir sq.

B. A. Union 1858, M. A. 1861, Ph. D. 1870; Professor of natural sciences, New York State Normal School 1861-74; Fellow of American Association for the Advancement of Science; Author Text book of natural philosophy, 1868, Text book of chemistry, 1869, Elementary natural philosophy, 1872, Elementary chemistry, 1873, Easy experiments in natural philosophy and chemistry, 1870, New text book of physics, 1880, New text book of chemistry, 1881, Guide to elementary chemistry, 1886.

1878 William B. Dwight, M. A. Professor of Natural History and  
35 Curator of the Museum.

M. A. Yale 1854, Ph. B. 1859; Founder and Principal of Englewood Institute for ladies 1860-5; Principal of Officers' family school, West Point 1867-70; Associate principal and instructor in science in State Normal School, Conn. 1870-8; Professor of zoology, Martha's Vineyard Summer Institute 1878-90; Fellow of the American Association for the Advancement of Science 1883- and Original fellow of the Geological Society of America (F. G. S. A.) 1889-; Fellow of the American Psychical Society; Member American Society of Naturalists and of Vassar Brothers Institute.

1881 Abby F. Goodsell, B. A. Lady Principal.

10 See also "Administration."

1883 Manuel J. Drennan, M. A. Professor of Rhetoric and of  
20 the English Language and Literature.

B. A. Oberlin 1857, M. A. 1860; Union Theological Seminary 1858-60; Professor in Hanover College, Ind. 1872-4; Instructor in English, Harvard 1880-3.

1883 Abby Leach, M. A. Professor of the Greek Language.

- 15 B. A. Vassar, M. A. 1885; Teacher Brockton High School (Mass.) 1872-3; Teacher Orend Institute 1873-8; Teacher Girls' Latin school 1880-3; Student, Harvard Annex 1878-82; Student Leipzig University 1886-7; Member American Philological Association.

1887 Lucy Maynard Salmon, M. A. Professor of History.

- 12 B. A. University of Michigan 1876, M. A. 1883; Principal, McGregor High School, Iowa 1876-81; Teacher of History, Indiana State Normal School 1883-6; Fellow in history, Bryn Mawr 1886-7; Associate Professor of History, Vassar 1887-9; Member American Historical Association; Author History of the appointing power of the President.

1887 Achsah M. Ely, B. A. Professor of Mathematics.

- 23 B. A. Vassar 1868; Teacher of mathematics, Connecticut Literary Institute 1868-70; Peddie Institute 1870-6; Normal College, New York city 1876-7.

1881 Mary W. Whitney, M. A. Professor of Astronomy and  
10 Director of the Observatory.

See also "Administration."

1834 Emile Achert. Associated Professor of the French Lan-  
36 guage and Literature.

Educated at Convent des Urselines and École Supérieure.  
Head of French department, Canandaigua female seminary 1859-66; Head of French department, Packer Collegiate Institute 1866-83.

1865 Henry Van Ingen. Professor of Drawing and Painting.  
28 Director of the School of Painting.

Exhibited work in National Academy of Design 1859-; Member of Water-Color Society.

1868 Frederick Louis Ritter, Mus. D. Professor of Music and  
Director of the School of Music.

Mus. D. University of the City of New York 1872; Honorary Member Harvard College Musical Association 1885; Author History of music in the form of lectures, Students' history of music, Music in America, Music in England, Manual of musical history, Musical dictation, Practical harmony, Method for chorus classes; Joint editor of "Laudamus"; Composer of five symphonies, several overtures, three cantatas, etc.

1875 Lydia Annie Whitney. Teacher of Piano-Forte.

- 16 Educated at Berlin.

1875 Jessie Chapin. Teacher of Piano-Forte.

17 Educated at Berlin.

1877 Sarah H. Hubbard. Organist and Teacher of Organ.

11 Educated at Cortland Normal School.

1886 Jessie M. Hoag. Teacher of Elocution. 150 Jay st.,  
8 Albany.

1886 Sophia F. Richardson, B. A. Teacher of Mathematics.

13 Teacher, private school. Rutherford, N. J. 1879-82; Principal,  
1882-5.

1887 Ella M. Freeman, B. A. Teacher of Chemistry.

6 B. A. Vassar 1884.

1884 Myra Reynolds, B. A. Teacher of English. 119 Evans av.

11 Pueblo, Col.

B. A. Vassar 1880; Teacher, Wells College 1880-2, Corning Free  
Academy 1882-4, Vassar 1884-7, Woodstock College 1887-8,  
Vassar 1888- .

1888 Lina Guantieri. Teacher of the French Language.

Head of the French department in the 12th st. School, New  
York 1856-61, Packer Collegiate Institute, Miss Crowfoot's  
School, Yonkers, for 3 yrs.

1879 Laura Adella Bliss, Mus. B. Teacher of Piano-Forte.

8 102 W. 93 st. N. Y.

B. A. Vassar 1877, M. A. 1886, Mus. B. 1888; Studied in Berlin  
1884-6, 1888-9, Paris 1886.

1886 Mabel R. Loomis, B. A. Teacher of English.

4 B. A. Vassar 1885.

1889 Marcella I. O'Grady, B. S. Teacher of Biology.

6 B. S. Massachusetts Institute of Technology 1885; Teacher of  
Science, Bryn Mawr school 1885-7; Fellow in Bryn Mawr  
College 1887-9; Demonstrator in Biological Laboratory, Bryn  
Mawr 1888-9.

1879 Charles Grube. Teacher of Violin.

46 Educated in Germany. Teacher Violin and Piano, Charles  
Bartlett Collegiate School for 3 yrs.; Piano and Guitar,  
Charles P. McLellan Female Collegiate Institute for 14 yrs;  
William Gibbons Female Quaker Institute for 8 yrs.; Violin,  
Flute, Guitar and Piano, Charles B. Warring Military Insti-  
tute for 10 yrs.; Degarmo Institute for 16 yrs.; Riverview  
for 5 yrs.; Piano, Miss Thomas' Institute for 10 yrs.; Director  
Germania Singing Soc.



1890 Jaenette B. Perry. Teacher of English.

11 B. A. Smith 1886.

1890 Fanny L. Story. Teacher of Organ.

12 Associate of the College of Musicians; A. C. M. Univ. C. N. Y. 1889.

Anna J. Bridgman. Teacher of Gymnastics.

1890 Herbert Elmer Mills, M. A., Ph. D. Associate Professor of  
6 History and Economics.

B. A. University of Rochester 1883, M. A. 1887; Ph. D. Cornell 1890; Sherman post-graduate scholarships in political science, University of Rochester 1883-4; Principal, Marion Collegiate Institute 1883-4; Assistant principal, Palmyra Classical Union School 1884-6; Fellow in history and political science, Cornell 1886-8; Acting instructor English history Cornell 1887-8; Assistant Registrar 1888-90; Instructor in ancient history, Cornell University 1889-90; Member American Historical Association.

1890 Edmund N. Snyder, Ph. D. Teacher of Latin.

B. A. Harvard 1886; Ph. D. Leipzig 1890.

1890 Ella C. Greene, B. A. Teacher of Latin.

B. A. Vassar 1887; Teacher Englewood, N. J. 1887-90.

1890 Otilie Herholz. Instructor in the German Language.

Teacher of Languages in Thorn, Germany and Lodz, Russia, 1864-72; Teacher of the German Language and Literature, Cincinnati 1872-90.

#### VACANCIES

Abby M. Goodwin, M. A. Professor of the Latin language. Died 23 Ap 1890.

Bertha Robinson. Teacher of English. Died My 1890.

Charles J. Hinkel, Ph. D., Matthew Vassar, jr professor of the Greek and Latin languages and literature. Resigned.

Clara J. Pearne. Teacher of piano-forte playing. Resigned.

Helen C. Putnam, M. D. Teacher of gymnastics. Resigned.

Mrs Elizabeth B. Thelberg, M. D. Professor of physiology and hygiene, and resident physician. Resigned.

Mary A. Wilson. Teacher of singing. Resigned.

Minna Hinkel. Associate professor of the German language and literature. Resigned S 1890.

## APPOINTED DURING YEAR

Herbert E. Mills, Ph. D. Associate professor of history and economics. Je 1890.

Jaenette B. Perry. Teacher of English. Je 1890.

Fanny L. Story. Teacher of organ.

Anna J. Bridgman. Teacher of gymnastics.

Edmund H. Snyder, Ph. D. Teacher of Latin.

Ella C. Greene, B. A. Teacher of Latin.

Ottilie Herholz. Instructor in the German language.

## PROMOTIONS

## In title alone

Marcella I. O'Grady, B. S. Associate professor of biology, from teacher of biology.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

(None)

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Erminie A. Smith prize for geology and mineralogy, Clara B. Dinturff, Penn Yan.....	\$50
Erminie A. Smith prize for geology and mineralogy, Antha L. Knowlton, Philadelphia .....	50
Barringer prize, Jessie J. Hendrick, Danbury, Ct .....	180

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

The curriculum has been carefully formed with regard to the conflicts between the prescribed and elective systems, and with the belief that experience demonstrates the need of much careful compulsory work as a preparation for free choice.

The effort has been to give the student the opportunity to follow certain lines of study continuously, through both the prescribed and elective portions of the course.

All elections are subject to the approval of the faculty.

Two languages, one of which shall be Latin, must be studied throughout the prescribed course by every student for a degree. The second language may be Greek, German or French.

An opportunity is given, in the elective part of the course, for beginning the study of Greek, German or French.

## DEPARTMENTS OF INSTRUCTION

### Undergraduate courses

#### LATIN

The instruction in Latin aims primarily at the exact understanding and accurate interpretation of a number of authors chosen as representatives of the chief periods in the history of Roman literature. In connection therewith, however, social, political and historical topics germane to the texts read and necessary to their intelligent comprehension are treated and discussed in class. The courses offered are so arranged as to afford an introduction to the Roman comedy and satire, to lyric and didactic poetry, to the chief historians, and to the ethical and rhetorical writings of Cicero.

In the prescribed course (freshman and sophomore year) particular attention is given to grammatical questions; and the practice in writing Latin, has for its end the fixing and application of the principles of syntax and the grasping of the difference of the Latin idiom from the English: in this work, therefore, the aim is correctness rather than elegance of expression.

In the elective courses larger amounts are read and attention is directed almost exclusively to the subject-matter and its exegesis, while linguistic comments are confined chiefly to the characteristics and peculiarities of the style of the authors preceding and following the age of Cicero. In the prose composition of the senior year attention is paid to elegance as well as correctness of diction. In all the courses exercise is given in reading aloud and translating at sight.

#### GREEK

The aim is to acquire as many-sided a knowledge of Greek as possible. Facility in reading Greek is cultivated and, to this end, practice at sight is given and private reading is encouraged. Attention is paid to grammatical principles, to the development of the language and of the literature, to different phases of Greek life and thought. Careful study is given to the style of each



author and to the distinctive excellence of each, and, in advanced classes, to text-criticism. The courses given embrace representative authors in history, oratory, philosophy, in epic, lyric, and dramatic poetry. In the junior year, a course in elementary Greek is offered to any non-Greek students who may wish it. Such students have an opportunity to continue the work with the subsequent freshman class.

#### GERMAN

In the German course instruction in grammar is given in all classes, together with exercises in German composition. Modern prose work of standard writers and leading classic plays of representative authors are read, and are made the subject of conversation and criticism, of oral and written paraphrase in class, and of lectures and essays.

The history of German literature is begun in the first semester of the sophomore year and continued in every following semester, with lectures on the most prominent authors and their works. The junior shorter course of two semesters is intended to give maturer students an opportunity of beginning the study of German in college, and of becoming sufficiently grounded in the elements of the language to be able to continue it afterwards by themselves or with an instructor. The work consists in a thorough drill in grammar, with written and oral exercises, and in the reading of prose and poetry, the matter read being made the subject of conversation in German.

#### FRENCH

This course may extend through the entire four years at the option of the student.

The most important grammatical principles are reviewed in the first year and instruction is given in idiomatic French. The student is required to prepare French translations, and at least one hour a week is devoted to grammatical criticism and the needful instruction in grammar and style. Selections from the best authors of the 19th century are read, translated, and made the subject of conversation. Especial attention is given to pronunciation. The work of the second year continues and extends that of the first, taking up the history of French literature, the translation and paraphrasing of more difficult modern French prose and poetry and two or more classical dramas. Critical reviews of the same are written by the student and attention is given to conversation and original composition. During the remaining years the



study of French literature is continued and lectures in French are given on the history of the language and literature. Masterpieces of the classical drama and selections from the most eminent writers of the 18th and 19th centuries are read, paraphrased, and criticised. Translation at sight from French into English and English into French is used as a means for mastering the French language.

In the class for beginners, commencing in the junior year, oral instruction, supplemented by written illustrations on the black board, is given until the ear and eye are sufficiently trained to enable the student to use a French text-book with profit. Great attention is paid to pronunciation, and to drill in grammar and verbs with oral and written exercises. Easy modern French prose is read, translated and narrated.

#### ENGLISH

Attention is drawn to the new terms for admission in English. The result of the examinations thus far held under the new system has proved eminently satisfactory. Formerly it was often found that candidates had no grasp of the principles of the structure of the sentence and the paragraph, and no skill in writing even common English. Instructors will find the new system, it is believed, not only more favorable to the pupil's acquisition of his native language as an implement, but also, when once introduced, much easier for teachers.

During freshman year there are three hours of prescribed work, in literature and rhetoric. These two courses are correlated, and conducted so that one shall illustrate the other. They are also combined with instruction in English composition; a number of essays on simple subjects are required, and also frequent exercises in extempore writing.

In the literature course, the aim is to make the student see what is meant by the study of literature as opposed to cursory and accidental reading. Popular and influential authors are chosen, and the student is urged to discover if she may the causes of their success. Macaulay, Irving, Scott, Hawthorne, have thus been made the subjects of attention. During the second semester several eminent recent poets are taken up and selections from their works handled in the same way.

In sophomore year three hours of English are prescribed, two of literature and one of rhetoric. The aim of the course in litera-

ture is to give a connected account of the chief writers of the formative periods of English literature, beginning with Wycliffe and Chaucer. The student is expected to become acquainted with the various authors at first hand: the earlier ones by means of specimens; the later ones by means of more or less copious extracts, or, in some instances, of entire works. This is not, however, a course in Old English. In rhetoric the subject for this year is the principles of literary invention. The study of the text-book is supplemented by the analytical study of numerous illustrative selections. During this course free class-room discussion is made an important feature of the work.

In junior year rhetoric is continued during the first semester as an elective, with essays. The course includes lectures on the principles of criticism supplemented by assigned library work. In the second semester an essay elective of one hour is offered. In literature there is, during the first semester, a two hours' course in Chaucer. Several of the Canterbury tales are read with particular attention to the pronunciation.

During the first semester of senior year there is a Shakspeare course of three hours. The purpose of this course is to give an introduction to the various lines of Shakspeare study, historical, literary, philological. A single play is thoroughly mastered, and the student is then assisted to draw out analytically the laws of dramatic poetry. A few other plays, if possible one of each class, are similarly treated. Anglo-Saxon is a three hours' course in the first semester. It is believed that this is sufficient to give the student a good basis for future Anglo-Saxon and Old English studies. For those who wish to go further this course is continued two hours in the second semester.

#### CHEMISTRY

The course in chemistry consists of four exercises weekly during three semesters and an additional two hours weekly in one semester. Instruction is given by means of lectures which are supplemented by laboratory investigation, library study, general discussion in the class-room and semi-annual examinations.

The general character of the work done and the special object sought in each semester may be stated as follows:

The first semester is devoted to a study of the non-metals and their compounds. In this "first course" the student is expected

to acquire some skill in manipulation. She is taught how to bring about various forms of chemical changes, how to investigate a chemical action by separating and identifying its products, and she is shown how the laws of combination and other principles of the science are obtained by generalizing the results of experimental work.

The second semester is devoted to a study of the metals and their compounds. In this "second course" the student is expected to become acquainted with the properties of the most typical and useful metals and to make a systematic laboratory study of their reactions. Some of the industrial applications of chemistry are considered in this connection. Attention is directed also to the bearing of observed facts on chemical theories. And, finally, by comparing and generalizing the result of her own experimental work the student reaches the analytical classification, and then proceeds to apply her knowledge by working out several analyses of substances of unknown composition.

The third semester is devoted to quantitative chemistry, and the chemistry of light. In this "third course" the student pursues a laboratory study of volumetric and gravimetric methods of analysis, and an illustrated lecture and library course in spectroscopy and photography.

The fourth semester is given to the study of the hydrocarbons and their derivatives. In this "fourth course" the laboratory work is devoted to the preparation of the typical members of the several series of organic compounds, while the lectures and the library work acquaint the student with the general system of classification, the methods of research, and the theories which are derived from the study of experimental results.

The chemical laboratories are commodious, well lighted and well ventilated rooms, containing separate tables to accommodate 104 students. Each table is supplied with running water, a sink, a filter pump, gas and burners and graduated glassware. No extra charge is made for apparatus or chemicals.

#### PHYSICS

The course in physics consists of four exercises weekly during two semesters.

The first semester is given to the study of the following subjects: the properties of matter, force, energy, system of measure-



ment, special phenomena in solids, liquids and gases, and electricity.

The second semester is given to the study of molecular and radiant energy, including the phenomena of heat, sound and light.

Lectures, amply illustrated by experiments, introduce the various subjects and give an outline of the plan of study. With this preparation the student passes to the library and then pursues a course of reading covering the ground marked out. A general discussion of the subject in the class room follows this lecture and library work, and finally, a semi-annual examination completes the work of each semester.

The cabinet of physical apparatus is well supplied with instruments suited to the work of the lecture room, and with many others adapted to the exact work of the laboratory. In electricity the department is especially well equipped. Among other things it is provided with a complete plant, consisting of an engine and boiler, a dynamo, a variety of incandescent lamps and a full power are. Constant additions of modern instruments are being made. A special fund for this purpose permits the purchase of apparatus from the best American and European makers, as needed.

#### MINERALOGY

A concise course in crystallography is given, illustrated by the best glass models of crystals, and accompanied by exercises in the determination of forms, and in goniometrical measurements. Physical and chemical mineralogy are then taken up, partly by recitations from the text-book, and partly by oral instruction, with special reference to a proper preparation for laboratory work. In descriptive mineralogy, the study of the principal ores and other minerals is conducted by oral instruction based as far as possible on the actual examination of specimens distributed among the members of the class. Meanwhile, at as early a point in the course as may be practicable, laboratory practice in the determination of minerals by the blowpipe and by chemical processes is begun and continued to the end of the semester. This work is in two courses; the first consists of a series of prescribed experiments with known minerals, as arranged in schedules prepared by the instructor. This course is so devised, with reference to the character and range of the specimens, that by its completion the student is made quite familiar with all the more important



reactions of the determinative processes. The second part consists in the determination, by each member of the class, of a large number of selected unknown minerals.

One or more excursions are taken to some locality of mineralogical interest.

#### GEOLOGY

A brief study of physiographic geology is followed by a course in lithologic geology; the elementary principles of petrography are here introduced; the methods of the optical study of minerals and rocks are taught and illustrated by the use of a lithological microscope, also by class exercises in the preparation of microscopic sections in minerals with reference to their optical examinations.

Dynamic geology is then taken up. An elementary course in paleontology follows, illustrated by the study of specimens, and by class practice in the actual determination of species of fossils. The members of the class are also exercised in the practical cutting and mounting of large microscopic sections of fossils, and rocks containing minute fossils, by means of a specially-devised rock-cutting machine of the largest dimensions and the most perfect equipment. Historical geology occupies the latter part of the course. Its lessons are well illustrated by a large representative set of North American fossils originally collected by the New York state survey, also by a valuable set of European fossils.

In senior year an advanced course in geology is offered, consisting, as the class may elect, either of studies in petrography, with the use of the lithological microscope and accessories, or of detailed instruction and practice in paleontology and stratigraphical geology and in field work.

#### BIOLOGY

The course in general biology, begun in freshman year of 1889-90, will be continued in the first semester of the junior year. This course serves as an introduction to the more special study of the biological sciences.

After a brief review of the essential facts of morphology and physiology brought out by the study of a number of representative forms of animal and vegetable life, the student will make a more careful study of a few selected types.

This short course in general biology will be succeeded by a course in general zoology in which the student makes a general survey of the animal kingdom, special attention being paid to the classification, development and homologies of invertebrates.

A course of comparative embryology and comparative anatomy will be taken up in the second semester. A thorough study of the embryology of the chick will be followed by a comparative study of the development of vertebrates and more detailed work in the comparative anatomy of the lower vertebrates.

In senior year, a more extended course in general zoology will be given in the first semester, followed by a course in comparative embryology.

An additional course in higher biology will be given in the second semester of senior year, including some of the leading questions of biological thought, such as natural selection, heredity, variation, adaptation, evolution and the history of the biological sciences.

In the laboratory, the student acquires a thorough knowledge of the forms discussed in the lectures and of the methods pursued.

An attempt is made to cultivate the spirit of original research. Students intending to study biology are recommended to acquire a knowledge of the elements of chemistry.

#### MATHEMATICS

In freshman year, there are three exercises a week in geometry, logarithms and plane trigonometry.

The exercises in geometry include recitations from the text-book, original demonstrations of propositions, and applications of principles to numerical examples.

In trigonometry, after the student has gained facility in the use of trigonometrical tables, applications of the principles are made to problems in mensuration, surveying, navigation.

In the first half of sophomore year there is a prescribed course of three hours weekly in spheric trigonometry, and in problems of plane and spheric trigonometry.

During the second half of the year an elective course of four hours weekly is given in analytic geometry. The student is carried through the elementary properties of lines and surfaces of the second degree, supplemented by numerous exercises and applications.

An elementary and an extended course in the differential and integral calculus are given in junior year, the elementary course during the first semester, the advanced course during the second semester.

In the first half of senior year, a course is given either in determinants and analytic geometry of three dimensions, or in differential equations. During the second half, a course in quaternions is offered.

The text-books used in the elective work are Wentworth's Elements of analytic geometry, Salmon's Conic sections, Byerly's Differential and integral calculus, Boole's Differential equations, and Hardy's Quaternions.

The aim of the course is, to cultivate habits of exact, sustained and independent reasoning, of precision and clearness in the statement of convictions and the reasons upon which they depend; to rely upon insight, originality and judgment rather than upon memory. From the first, students who show special aptitude are encouraged in the working of subjects which require more prolonged investigation than the daily exercises of the class-room.

#### ASTRONOMY

The course in astronomy begins in the second semester of sophomore year, and extends through the remainder of the course.

The sophomore lectures are usually given in the evening and are accompanied by several opportunities to examine interesting objects with the telescope.

The junior course provides an elementary treatment of the principal subjects of astronomy. It is illustrated by frequent examples and applications, drawn as far as possible from local data. It requires only the prescribed mathematics of the college course, supplemented by a few lectures by the instructor on conic sections. The students have the free use of the portable telescopes, and such questions as they can determine by their own observations with these glasses are kept before them. These telescopes are supplied with a ring micrometer.

The senior course requires a knowledge of calculus. It is both practical and theoretic. During the first semester, the students use freely the meridian circle, making and reducing their own observations. They predict occultations and observe them. In the second semester, their practice is transferred to the equatorial



telescope and micrometric measurements. They also use the spectroscope. Theoretic astronomy is treated during the latter part of the year, generally under the form of comet's orbit.

#### PHYSIOLOGY AND HYGIENE

A course in hygiene extends through freshman year. It consists of lectures, recitations and practical investigations of the principle of house sanitation. All new students are required to attend.

An advance course in physiology is offered as an elective during senior year, and comprises lectures, text-book work, microscopic study of tissues, experiments in physiological chemistry, and frequent dissections. The anatomical cabinet furnishes models for practical demonstrations.

#### HISTORY

The undergraduate work in history aims to give opportunity during sophomore and junior years for a somewhat comprehensive but careful study of general European history from the beginning of Greek civilization to the present time. During senior year facilities are offered for special work in English and American constitutional history.

In sophomore year the first course on ancient history is required of all regular members of the class. Introductory lectures are given on the objects and methods of historical study, and on topics in the prehistoric period of Greek history as the Aryan basis of Hellenic civilization, early foreign influences, effects of physical geography, the settlement of Greece, and the Dorian migration. The heroic age is studied in the Homeric poems with a lecture on the reliability of their evidence. The further class work is done partly by a study of Plutarch and other sources, and partly by topical reading. The work in Roman history has this year been based on a text-book, the one used being the abridgment of Mommsen, by Bryans and Hendy.

This course may be followed by an elective one on medieval history. The method is lecture, text-book, and reading upon a topical outline. Each student should be provided with Myers' Medieval and modern history, and all are urged to secure such other standard works as their means will allow.

The work of junior year is devoted to special studies on the political and religious condition of Europe during the 15th



and 16th centuries, as illustrated by contemporaneous literature, the political and religious history of Europe to the treaty of Westphalia, the French revolution, the political history of France during the 19th century, and the rise of the German empire.

In senior year an advanced course is offered for the critical study of the origin and development of the English and American constitutions and a comparative study of the existing political institutions of the two countries.

In American history the work includes the study of the government of the individual colonies, the different attempts to form a union, and the adoption of the present constitution. This work is followed in the second semester by a careful study of some special period in American history, the period selected varying each year.

The work of the department is conducted by means of textbooks, topical outlines, lectures and classes for special study. The students have free access to all works in the library and are required to do independent work. Frequent lectures on historical subjects are given by eminent specialists from other colleges and universities.

#### LOGIC

This study is offered as a four hours' course, through one semester of junior year. As students in logic are often hindered in their progress by the lack of some knowledge of the nature and laws of the mind, a short outline of psychology precedes the study of the laws of thought. The principles of argumentative composition are then taken up as a sequel to the work in logic.

#### PSYCHOLOGY

The study of this science is required of all candidates for a degree. It extends through half senior year, as a four hours' course. The aim is to acquaint the student thoroughly with the principles of the science by a detailed study of the facts and processes of the mental life, and then in the study of the nature of intelligence to observe them in combination. The purpose of the instructor is to show the relation of the facts thus observed to the principles underlying the current discussions of philosophy and religion. A text-book is used throughout the course, not chiefly as a guide but as a basis for discussion by the student and teacher. This course is supple-

mented by a course of lectures dealing with the theories of perception as they appear in the writings of modern philosophers, with the psychological and cosmological problems involved in them.

A series of essays, prepared by the members of the class, reviews in outline the history of ancient and modern philosophy. These are read before the class and discussed by the instructor.

A short course of lectures is also annually provided for this class: Dr Schurman, of Cornell University, Dr Murray, of McGill College, Montreal, and this year President Robinson, of Brown University, have thus discussed special topics in philosophy.

A graduate course is offered by the department in the study of Hume and his influence in modern thought.

#### ETHICS

This course is also required of students for a degree. It occupies three hours a week for one semester. The methods of instruction are similar to those outlined above. A text-book forms the basis of the work, and is made the ground of free discussion. A course of lectures supplements the work, and a series of essays brings before the class the outline of the history of ethical theory. The chief topics of study are the conscience, moral law, the will, and the ultimate ground of moral obligation. The relations of the principles thus discovered to the duties of moral beings to self, others, and God, are also discussed.

A graduate course in the history of ethical philosophy in England is also offered.

#### BIBLE STUDY

The college aims to give, in a progressive course of study, such instruction as shall enable the student to gain a general knowledge of the history and teachings of the Bible. During the present semester Dr W. R. Harper, of Yale University, has given one lecture a week on the Psalms. A course in the New Testament is projected for the second semester.

#### Graduate courses

Courses of advanced study are offered by the various departments of the college, to graduates of colleges who may prove to the faculty their ability to profit by them. It is the purpose of the faculty thus to encourage independent work. The student

will have the advantage of study with the instructor, and of a general direction in her investigation.

Graduate courses of study, under the direction of the heads of the different departments of instruction, will be arranged for such resident graduates as wish to take examinations for the second degree in arts (M. A.).

The following courses are offered for the coming year.

*Ancient languages* — History of the epic poetry of the Romans, with a course of reading from their epic poets. Instruction and exercise in the critical study and interpretation of Latin authors. Advanced courses of reading from Roman authors representing special periods of Roman literature. Selections from the Attic orators. Especial attention will be given to practice in text-criticism. Dionysius of Halikarnassus will be read in connection with this course. Attic inscriptions.

*Modern languages* — Studies in middle high German and old French.

*Philosophy* — Hume and his influence in modern thought. The history of ethical philosophy in England.

*History* — American constitutional history.

*Natural history* — Paleontology and geological fieldwork.

*Chemistry and physics* — Any two of the following: Course of laboratory work in electricity. Course of laboratory work in light, including the spectroscope and its applications. Course of practical chemistry and physics adapted to the wants of teachers.

*Astronomy* — Practical work in the observatory.

*English* —

1 Anglo-Saxon poetry; Beowulf finished, Andreas, Judith, Elene, Caedmon's Exodus; Sievers' grammar will be used and reference made to the various histories of Anglo-Saxon literature.

2 Anglo-Saxon prose; Selections from a number of prose authors; Sievers' grammar and readings in the history of Anglo-Saxon literature as in course 1. Both of these courses imply an elementary knowledge of Anglo-Saxon—Sweet's Reader or an equivalent; and they will be given in alternate years.

3 Literature of the 14th century; Selections from Langland and a large part of Chaucer will be read with thorough study of the grammar; attention will also be given to the history of the literature of the period, both in England and on the continent.



4 Reading courses in English literature will be marked out for students who desire them, according to their stage of advancement, and also their purposes and aims.

### Special courses

Students of sufficient maturity and preparation may take eclectic or irregular courses, provided that the course proposed shall be decided by the president to be preferable to the regular course for the objects in view. Such courses will be arranged by the professors whose departments they wish to enter, to whom they will be referred by the president for examination in reference to their qualifications. In general, the qualifications for admission to special courses must be equivalent to those for admission to the freshman class. Such students should be at least 19 years old.

### Courses for teachers

Teachers who desire to pursue special courses and who present to the president satisfactory testimonials of their success, may be received without examination, with permission to reside out of college. Certificates of the work accomplished will be given when desired.



## FRESHMAN YEAR

## SOPHOMORE YEAR

Hours  
per WeekHours  
per Week

## FIRST SEMESTER

4 Latin—Livy; Prose composition  
4 Greek—Lysias, Selected orations;  
composition; Reading at sight  
4 German—Schiller, Maria Stuart,  
and selections from Schiller's  
Prose; Composition with reference to an advanced study in Gram-  
mar; Select German poems from Simonson's *Deutsches Balladen-*  
*Buch*, the shorter poems memorized, the longer paraphrased  
4 French—Review of French syntax; Composition; Idiomatic French;  
Reading of French prose; Exercise in conversation  
2 Rhetoric—Principles of narrative and descriptive composition;  
Five essays for the year  
1 English literature—Selections from Scott, Irving, Macaulay, Haw-  
thorne, George Eliot, Matthew Arnold  
3 Mathematics—Chauvenet, Solid, spheric, and modern geometry  
1 Hygiene—Personal and public hygiene  
Lectures on the History of Art (Elective for all classes)

4 Latin—Horace, Odes, Epodes, and *Carmen speculare*  
4 Greek—Homer, Selections from the Iliad and Odyssey; Lectures on  
Homeric antiquities; Private reading, Iliad, selections; Reading  
at sight  
4 German—Goethe, Goetz von Berlichingen; Composition and Ger-  
man poems  
4 French—Selections from V. Hugo, Lamartine, A. de Musset, Coppee,  
etc. Composition; Dictation; French poetry memorized and  
paraphrased  
1 Rhetoric—(As in first semester)  
2 English Literature—Selections from Wordsworth, Byron, Tenny-  
son, Longfellow, Browning; A number of entire poems will be  
critically read  
3 Mathematics—Logarithms; Plane trigonometry  
1 Hygiene—Personal and public hygiene  
Elocution

## SECOND SEMESTER

3 Latin—Cicero, Brutus, or *De amicitia* and *De senectute*; Cicero's  
Letters, selections; Prose composition  
3 Greek—Demosthenes; On the crown, with parts of False legation;  
English into Greek; Lectures on Attic orators; Private reading,  
Aeschines, *Against Ctesiphon*  
3 German—Schiller, *Jungfrau von Orleans*; History of German  
Literature begun; Selections from the first classic period;  
Composition  
3 French—History of French literature from its origin to the 17th  
century; Moliere, *Le bourgeois gentilhomme*; Racine, *Atthalie*, or  
equivalents; Composition, letters; Reading and translation at sight  
1 Rhetoric—Principles of literary invention; Essays throughout the  
year  
2 English literature—Lectures on the development of English litera-  
ture; Authors critically studied; Instruction in the use of the  
library  
3 Mathematics—Plane and spheric trigonometry; Lectures on  
surveying and navigation  
3 History—Greek and Roman,—to the invasion of the Barbarians

## SECOND SEMESTER

2 Latin—Horace, Satires and Epistles  
2 Greek—Plato, Protagoras; Aristophanes, Clouds; Another play of  
Aristophanes will be translated to the students  
2 German—Goethe, Egmont; History of literature and composition  
continued  
2 French—The work of the first semester continued  
1 Rhetoric—(As in first semester)  
2 English literature—(As in first semester)  
4 Mathematics—Analytic geometry; Lectures on the history of  
mathematics  
4 Chemistry—Description of the non-metals; Elementary chemical  
philosophy; First course in experimental chemistry; Lectures,  
recitations, and laboratory work  
4 History—Medieval  
1 Latin (at sight)  
Lectures on descriptive astronomy  
Elocution

## PRESCRIBED

## ELECTIVE

JUNIOR YEAR		SENIOR YEAR	
Hours Per Week	FIRST SEMESTER	Hours Per Week	SECOND SEMESTER
	ELECTIVE		
3	Latin — Tacitus, Agricola and Annales; Lectures on Tacitus' life and writings, and on the Latinity of the Silver age	4	Mental Philosophy (required) — Murray, Hand-book of psychology; Lectures; Essays on the history of philosophy
2	Greek — Thucydides, Selections; Lectures on the History of Greek prose; Private reading; Isocrates, Panegyricus	3	Any two of these languages may be elected: Latin — Cicero, De officiis or De oratore; Lectures on Roman literature
3	Greek, Shorter course — Grammar; Xenophona begun	2	Greek — Lyric poets, Selections; Pindar, Selections; Lectures on Greek poetry
2	German — Goethe, Iphigenie and Tasso; Essays; Lectures on German literature	2	German — Essays; Selections from modern German authors; Reading at sight; Private reading with examinations; Lectures
3	German, Shorter Course — Collar-Eysenbach, Grammar, with written and oral exercises; Deutsche Märchen; Benedix, Günstige Vorzeichen; Exercises in German conversation	2	French — Literature of the 18th Century; Selections from Voltaire, Montesquieu, Buffon, J. J. Rousseau, etc.; Essays; Lectures
2	French — Literature of the 17th Century; Selections from Corneille	3	Anglo-Saxon — Sweet, Reader
3	Racine, Molière; Lectures; Essays	3	English Literature — Shakspeare; Lectures on dramatic art
3	French, Shorter Course — Paul Bercy, La Langue Française; Hennequin, Verbs; Composition; Grammar; Reading of modern French prose	3	Astronomy — Spheric and practical astronomy; Lectures; Use of the meridian instrument
2	Rhetoric — Advanced, with essays; Lectures on the principles of criticism	4	Physics — Force, motion, and energy; The three physical forms of matter; Electricity; Daniel, Principles of physics; Lectures and recitations
2	English Literature — Chaucer	2	Chemistry — The hydrocarbons and their derivatives
4	Mineralogy — Dana, Manual, illustrated by laboratory practice in the blowpipe determination of minerals	3	Mathematics — Differential equations and elements of finite differences
3	Biology — General biology	3	Geology — An advanced course, either in petrography or in paleontological and stratigraphical geology, with practice in field work
4	Astronomy — Lectures; Young's General astronomy; Use of the portable telescopes	3	Biology — General zoology
4	Chemistry — Descriptions of the metals; Qualitative analysis; Lectures, library and laboratory work, recitations	4	History — English and American constitutional history
3	Mathematics — Differential and integral calculus; History of mathematics	2	Art history
3	History — Modern, — from the period of the reformation		

JUNIOR YEAR		SENIOR YEAR	
Hours	Per week	Hours	Per week
SECOND SEMESTER			
ELECTIVE		ELECTIVE	
3	Latin — Pautus or Terence; Juvenal; The Roman comedy and satire	3	Moral Philosophy (required) — President Robinson's principles and practice of morality; Lectures; Essays
3	Greek — Sophocles, <i>Oedipus the King</i> ; Aeschylus, Persians; Lectures on the drama; Private reading, Euripides, <i>Alcestis</i>	3	Latin — Lucrētius, <i>De natura rerum</i> , with introductory lectures; Horace, <i>Ars poetica</i> ; Prose composition, with lectures on the theory of Latin prose
3	Greek, Shorter Course — Xenophon continued; Homer	3	Greek — Plato, Republic, Selections; Aristotle, Nicomachean ethics, continued
2	German — Goethe, <i>Iphigenie</i> and Tasso; Essays; Literature continued		
3	German, Shorter Course — Grammar completed, with written and oral exercises; Schrakamp, <i>Erzählungen aus der deutschen Geschichte</i> ; Exercises in German conversation	2	German — Goethe, Faust, Parts 1 and 2; Essays; Lectures
2	French — Literature of the 17th century continued; Selections from Boileau, LaFontaine, Pascal, Descartes, Bossuet, Mme. de Sévigné and other eminent writers of that period; Essays; Lectures	2	French — The work of the first semester continued
3	French, Shorter Course — The work of the first semester continued	1	Anglo-Saxon continued
4	Logic — Preceded by an outline of psychology, and followed by the chapters on argumentative composition in A. S. Hill's <i>Rhetoric</i> ; Two Forensics	2	English — Philology — Lectures
4	Geology — A general course; Dana, Text-Book, with lectures; Exercises in the study of fossils, and in the preparation of microscopic sections of rocks and minerals	4	Physics — Molecular and radiant energy, including heat, sound, and light; Daniel, Principles of physics; Lectures and recitations
3	Biology — General biology	2	Astronomy — Theoretical lectures; Use of the equatorial telescope
4	Astronomy — Lectures; Young's General astronomy; Use of the portable telescopes	3	Mathematics — Quaternions
4	Chemistry — Quantitative analysis; The chemistry of light; Lectures, library and laboratory work, recitations	4	Physiology — Lectures with references; Walker, Anatomy, physiology and hygiene; Kirke, Physiology
3	Mathematics — Differential and integral calculus; History of mathematics	3	Biology — Comparative embryology and advanced biology
3	History — Completion of the work of the first semester	3	History — American constitutional history
1	English — Essays	2	Economics — (In 1890-91)
2	History of Art		Economics — Advanced course (In 1891-92)
	Elocution		Elocution



## Schools of painting and music

The departments of painting and music, besides providing for the instruction of collegiate students, constitute schools for special instruction in these arts. The professors of these departments are the directors of the art schools; to whom, respectively, in connection with the president, the internal management of the schools is committed.

Art students may reside in the college, or away from it. If residing elsewhere, they will have access only to the rooms and exercises connected with the art pursued, unless by special permission.

If residing within the college, art students will be subject to the same regulations as other college students. They will be expected to take college studies, under the direction of the president, for the profitable employment of the time not devoted to their special art.

A full course of study in either department covers three years, but students who have already attained some degree of proficiency may finish the course in a shorter time.

Special courses adapted to the circumstances of the student may be arranged by the director, with the approval of the president; but no student is allowed to pursue a course of study that has not been sanctioned by the proper authorities.

Diplomas are awarded to those who have completed a full course, and have passed all its required examinations. To others, certificates will be given on their leaving, stating what they have actually accomplished.

No student will be allowed to pursue a course in either of the art schools in addition to the regular college course with a view to receiving both diplomas at the close of the four years allotted to the college course.

### PAINTING

#### *First year*

*First semester* — Practice in the handling of crayon, charcoal and pencil. Copying from the flat.

*Second semester* — Drawing from objects, in crayon, charcoal, or pencil. Lessons in perspective.

#### *Second year*

*First semester* — Drawing from the antique — ornaments, hands, feet, busts. Painting in oil or water colors, with technical



instruction and practice. Lectures on artistic anatomy and ornamentations.

*Second semester* — Drawing from the antique — bust and statue. Lectures on proportion, artistic anatomy, and the history of art. Drawing from nature.

### *Third year*

*First semester* — Drawing and painting, from the life-model, landscape, still-life, etc. Instruction and practice in composition and criticism.

*Second semester* — Practice in drawing, painting, composition, etc.

A course of lectures is given each year embracing

1 The theory of the arts of painting, sculpture, and architecture, and its application to the ornamentation of rooms, to furniture, dress, etc.

2 The history of these arts, illustrated by the works and lives of the great artists.

3 Stereoscopic illustrations of the principal works in painting, sculpture, and architecture.

The art gallery, elsewhere referred to, furnishes abundant material for illustrations.

There will be regular examinations on the subjects of the various lectures and lessons, and at the end of each semester an examination on its entire work. On the results of these examinations the progress of the student through the course, and the diploma will depend.

### MUSIC

Piano-forte playing

Organ playing

Singing

Violin playing

Theory of music, embracing :

*a* Harmony

*b* Simple and double counterpoint, canon and fugue

*c* Forms

*d* Instrumentation

History of music

The course of study in any of the above branches covers three years, provided the candidate is well prepared when entering on the course.

The study of harmony, including the different species of simple counterpoint, is obligatory for all students of music.

There will be periodical examinations of each student, in order to determine her progress. On the result of these examinations the awarding of the diplomas will depend.

### REQUIREMENTS FOR GRADUATION

Students having completed the regular course will receive the degree of bachelor of arts (B. A.)

The requirements for certificates or diplomas on completion of the other courses are explained under the respective heads.

The degree of master of arts (M. A.) may be conferred upon bachelors of arts of this or any other approved college, who have pursued a course of advanced non-professional study. Resident candidates for the degree must present a thesis and pass a satisfactory examination on one year of study, non-resident, on two. The latter must submit to the faculty their proposed course of study at least two years in advance. The thesis must be submitted to the faculty at least six weeks before commencement.

A year of residence is required of all candidates not graduates of this college.

The degree of doctor of philosophy (Ph. D.), in course, will be conferred on graduates of this or of any other approved college. The requirements for such a degree will be a three years' course in liberal studies, one of which shall be spent at this college. Two principal subjects of study must be pursued by every candidate for the degree, examinations must be taken in both, and a thesis showing original research must be presented on one of them. The candidate must be able to read Latin, French, and German, and must have at least an elementary knowledge of Greek.

### BUILDINGS

Main building, four (in part five) story brick, floor area 202,338 sq. ft., 10 class rooms, 645 seats, value \$328,415. Chapel in main building, floor area 3,735 sq. ft., 650 seats. Dormitory in main building, floor area 64,500 sq. ft. Library in main building, floor area 2,813 sq. ft. Laboratory, brick, one class room, floor area 10,318 sq. ft., value \$13,816. Museum building, brick, two class rooms, floor area 26,100 sq. ft., value \$73,151. Observatory, brick, one class room, floor area 3,560 sq. ft., value \$6,040. Gymnasium, brick, floor area 12,004 sq. ft., value \$26,000. Laundry, brick, value \$13,609. Boiler house, brick, value \$37,410. Gate lodge, brick, value \$6,684. Conservatory, floor area 800 sq. ft., value \$2,000.

# DREW SEMINARY AND FEMALE COLLEGE

*Carmel*

CONSISTING OF

Collegiate Department

Academic Department

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
		Daniel Drew purchased building formerly belonging to Raymond Collegiate Institute.
23 Ap	1866	Drew Seminary and Female College incorporated by legislature.
S	1866	Institution opened.

## TRUSTEES

There is no acting board of trustees. The property is held by D. D. Chamberlain under a deed of trust for the purposes of the school, which makes it obligatory on him to deed it in fee to the corporation created by the legislature in 1866 whenever the corporation is ready to receive it.

## COLLEGIATE DEPARTMENT

*Carmel*

### ADMINISTRATION

Figures in column at left give first year of service in Drew.

1866 President, George Crosby Smith, M. A.

B. A. Wesleyan University 1856, M. A. 1859; Professor of natural sciences and Latin in Seminary and Female College, Tilton N. H. 1857-8; Professor Latin and natural sciences, Newberry Seminary and Female College, Vermont 1858-62; President and Professor of Latin 1862-6; President Drew Female Seminary 1866—.

1889 Preceptress, Julia Evans, B. A.

B. A. Boston University 1888; Member Massachusetts Society for the University Education of Women.

1887 Secretary, Lyman F. Brown.

1889 Librarian, Ada J. Blanchard, M. L. A.

M. L. A. Vermont Methodist Seminary 1885.

## INSTRUCTION

Figures in column at left give first year of service in Drew and years spent in teaching.

1866 George Crosby Smith, M. A. Mental and Moral Science  
34 and Logic.

See also "Administration."

1887 Lyman F. Brown. Piano, Organ, Harmony and Vocal  
30 Culture.

1889 Julia Evans, B. A. Latin.

2 See also "Administration."

1887 Alice L. Heath, Ph. B. Teacher of French and German.

5 Ph. B. Boston University 1886; Taught in East Greenwich  
Academy 1884-5; Teacher in La Grange Collegiate Institute  
1886-7.

1887 K. Estelle Powers, M. A. Painting, Drawing, Botany and  
4 Geology.

M. A. Drew 1886.

1889 Ada J. Blanchard, M. L. A. Natural Science and Mathematics.

1 See also "Administration."

1 L. May Nash, B. L. Elocution, History and English.

B. L. Ohio Wesleyan University; Diploma from Norwalk  
School of Elocution.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported for this department.

## COURSES OF STUDY

*First year*

*First term* — Arithmetic reviewed; Physics; Lessons in French dictation; Contes Merveilleux.

*Second term* — Rhetoric; Physical geography; Fables de la Fontaine; Lessons in idiomatic French.

*Third term* — Rhetoric; Elocution; Business forms; Idiomatic French finished; Télémaque.

*Second year*

*First term* — Botany; Book-keeping; Entretiens sur la grammaire; Les récréations philologiques.

*Second term* — Physiology; Astronomy; Entretiens sur la grammaire; Les récréations philologiques.



*Third term* — Zoology ; Botany ; Tellier's *grammaire Francaise* ; *Le Cid*.

For the ancient classical course : Cæsar, Virgil's *Æneid*, Cicero's Orations, Latin syntax, prosody and prose are added to the above. French conversations, narration and composition throughout the course.

### *Third year*

*First term* — Geometry ; Chemistry ; Cicero *De amicitia*.

*Second term* — Geometry ; Ancient history ; Horace.

*Third term* — Geometry ; Medieval and modern history ; Political economy.

### *Fourth year*

*First term* — Geology ; English literature, with readings and criticism.

*Second term* — Mental science ; English and American literature ; Science of government.

*Third term* — Moral science ; Evidences of Christianity ; Logic.

The college course above, without the French or Latin, constitutes the scientific course ; with the French, the modern classical, with both French and Latin, the classical. German may be substituted for French.

Students can also take any studies of the regular courses which they are prepared to pursue together with music, and painting.

## MUSIC COURSE

### THE PIANO-FORTE

#### *First year*

*The Legato touch* — Finger exercises with the hand passive.

*Elements of music* in connection with exercises written and oral for laying a good foundation by systematic training in quickness of perception as well as agility of fingers and wrists.

Instructive compositions for two and four hands by Reineke, Schumann and others.

#### *Second year*

*Technical studies* — Daily and systematic transposition of scales, chords and cadences through all the keys.

*Etudes* — One of the following or equivalent each term ; Heller, op. 47 ; Duvernoy, op. 120 ; Loeschorn, op. 66 ; Czerny, op. 636.

Two or more pieces each term ; one to be completely mastered and memorized.

*Third year*

*Technical studies* — Analysis and form ; Transposing at sight.

*Etudes* — J. B. Cramer ; (Bülow) Kullak's octave studies.

*Pieces* — One or more of the less difficult of Beethoven's sonatas. Pieces by more recent and living composers ; three each term ; one to be mastered and memorized.

*Fourth year*

*Harmony* — (Richter's manual) ; Original oral exercises in analysis and composition throughout the year.

*Etudes* — Chopin, op. 10 and op. 25 ; Mochelles, op. 70 ; Selections from Gradus of Clementi and works of Sebastian Bach.

Difficult sonatas of Beethoven ; Works of Schubert, Chopin, Schumann, Liszt, and others, contemporaries and successors.

The technical exercises throughout the course are selected mainly from Mason's technics, Plaidy's technical studies, and Tausig's technical exercises and daily studies.

This outline of work in music is modified and supplemented to meet the wants of individual pupils.

Lectures are given on various musical subjects, including history and biography, accompanied by recitals illustrative of the works of different composers.

## THE VOICE

Work in this department includes a study of the elements of music, correct breathing, and management of the breath in production of tone, studies in sight-singing, and exercises for equality, strength, flexibility, and correct placing of the voice throughout its entire natural compass, also for the acquirement of a distinct pronunciation, perfect intonation, neatness and ease of attack, style and expression.

The course employed for the formation and development of the voice may be indicated as follows :

Federlein's school of vocal culture, Concone's school of sight-singing, Panofka's vocal A, B, C, followed by selected studies from the works of Seiber, Panofka, Concone, Nava, Marchesi, and others. English, Italian, and German songs, arias and concerted pieces, are used when practicable, adapted to the compass of voice and ability of the pupil.

## BUILDINGS

Main building, four story brick and stone, built 1850, total floor area about 23,085 sq. ft., seven class rooms, 75 seats, value \$30,000.

# RUTGERS FEMALE COLLEGE OF THE CITY OF NEW YORK

*54 and 56 W. 55 st., New York*

## HISTORIC SKETCH

Month Year

For list of date abbreviations see p. 254.

- 10 Ap 1838 Rutgers Female Institute organized. Named for Col. Henry Rutgers.
- 23 Ja 1840 Received under visitation of regents.  
1860 New building purchased, Fifth av. between 41 and 42 sts.
- 11 Ap 1867 Legislature changed name to Rutgers Female College. No power to confer "professional" degrees. Recommendation of regents to charter given on express and published statement that the proposed college had property equal in value to \$150,000 and would maintain college standard of scholarship. Subsequent financial difficulties prevented fulfillment of this pledge.
- 20 S 1869 Branch opened at Harlem. Discontinued after two years.  
1871 Real estate sold under foreclosure of mortgage.
- Ag 1872 George W. Samson, D. D., read at University Convocation a paper suggesting curriculum of collegiate study especially adapted to young women. Plan generally approved; published by regents in separate pamphlet. Established in college in 1886.  
1881 College moved to present location.
- 20 Jl 1888 Regents granted charter to Rutgers Female College of the City of New York. Power to grant any University degrees except those of law, medicine or other learned professions.
- 12 O 1888 Trustees reorganized.

## TRUSTEES

Term  
expires

- 1893 Chairman, Rev. Samuel D. Alexander, D. D. . . . New York
- 1891 Acting Treasurer, Rev. George W. Samson, D. D. " "
- 1891 Secretary, Charles H. Kitchel . . . . . " "
- 1891 Hon. Thos. L. James . . . . . " "

Term  
expires

1891	D. McLean Shaw	New York
1892	Edward H. Harwood, M. D.	"
1892	Edwards H. Rockwell	Brooklyn
1893	William N. Dunnell, D. D.	New York
1893	Amos G. Hull	Brooklyn

## APPOINTED DURING YEAR

1891	Prof. J. C. Overhiser	New York
1892	Rev. William H. P. Faunce	"
1892	William L. Snyder	"
1892	Prof. E. B. Southwick	"
1893	Prof. Albert S. Bickmore	"
1893	Rev. James H. Darlington, D. D.	Brooklyn
1893	Rev. George R. Vande Water, D. D.	New York

## VACANCIES

Clinton B. Fisk, New York, died  
 Edwards Hall, M. D., New York, resigned  
 Charles A. Leale, M. D., New York, resigned  
 Wm. M. McLaury, M. D., New York, resigned  
 John O. Mott, New York, seat declared vacant

## ADMINISTRATION

Figures in column at left give first year of service in Rutgers Female College.

1871 President, George Whitefield Samson, D. D., LL. D.

B. A. Brown University 1839; B. D. Newton Theological Seminary 1843; President Columbian University (Washington) 1858-71; President Rutgers Female College 1871-5 and 1886-; Author *To daimonion, or the spiritual medium*, *Outlines of the history of ethics*, *Elements of art criticism*, *Physical media in spiritual manifestations*, *The atonement*, *Divine law as to wines*, *English revisers' Greek text shown to be unauthorized*, *Guide to self-education*, *Guide to Bible interpretation*, *Idols of fashion and culture*.

1885 Principal, Mrs E. S. West, M. A.

Educated at Rutgers Female Institute.

1867 Secretary, Daniel S. Martin, Ph. D., 236 W. 4 st.

B. A. University of the City of New York 1863, M. A. 1866; Ph. D. University State of New York; Fellow American Association for the Advancement of Science; Member American Institute of Christian Philosophy, American Institute of Civics, Executive committee New York State Forestry Association; Editor *Annals New York Academy of Sciences* 1880-.



## INSTRUCTION

Figures in column at left give first year of service in Rutgers Female College and years spent in teaching.

- 1871 George Whitefield Samson, D. D., LL. D. President. Mental and Moral Philosophy, Logic and Art Criticism.  
51 See also "Administration."
- 1885 Mrs E. S. West, M. A. Ancient and Modern History.  
15
- 1867 Daniel S. Martin, Ph. D. Physics, Chemistry and Geology.  
24 See also "Administration."
- 1887 Mrs Emily C. Hoyt, M. A. Mathematics.  
6 Educated at Gannett Institute, Boston.
- 1887 Eva M. Hubbard, M. A. Latin Language and Literature.  
16 Educated at Tilden Seminary.
- 1888 Jeannette B. Greene, M. D. Physiology, Botany and Zoology.  
6 Educated at Women's Medical College, Philadelphia.
- 1889 Mrs Anna Randall-Diehl. Reading and Elocution.  
30 Educated at Falley Seminary.
- 1882 Madame W. T. (Andriot) Ford. French Language and Literature.  
40 Educated at Paris and Bonn.
- 1889 Mrs T. G. Cozart. History and Mathematics.  
10 Educated at Kitrell's Springs College, N. C.
- 1889 Mrs Julia K. Colles. Social Culture.  
2 Educated at Springler Institute.
- 1887 Adolph Dreyspring, Ph. D. German and French Language and Literature. 806-808 Broadway.  
20 Ph. D. Rutgers Female College; Instructor in German, Mount Pleasant Academy; Author Easy lessons in German, 1886, Cumulative method, 1883, German verb-drill, 1885, First German reader, 1888, Easy lessons in French, 1886, Leichte aufgaben im Englischen, 1889.
- 1888 Ella Joslyn. Music and Vocal Culture.  
Educated at University of Michigan.
- 1889 Albert W. Berg. Piano and Organ.  
30 Educated at Paris and Brussels.
- 1889 Adèle M. Woodward. Violin.  
3 Educated at Paris and Brussels.

1887 Bessie F. French. Drawing and Painting.

3 Educated at Rutgers Female College.

1887 Juliet Corson. Cooking and Household Economy.  
(Absent during year.)

#### VACANCIES

1888 Adèle Roch, Ph. D. Lecturer of modern literature and art.

31 Died My 1890.

#### APPOINTED DURING YEAR

Mrs T. G. Cozart. History and mathematics.

Mrs Julia K. Colles. Social culture.

#### HONORARY DEGREES

B. A.—Cornelia B. West ..... New York

M. A.—Emily C. Hoyt ..... “

Eva M. Hubbard ..... “

Rev. Lindsay Parker ..... “

Frances E. Tower ..... Terre Haute, Ind.

Sci. D.—Jeanette B. Greene, M. D ..... New York

Ph. D.—Adolph Dreyspring ..... “

#### COLLEGE APPOINTMENTS

Valedictory, Isabel Shea

Salutatory, Latin, Ada M. Kearney

English, Hattie A. Slade

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Four prizes of books given in the French department by the professor personally.

Mabel Nicholas

Marion Shillaber

Ida Marcovici

Ethel Campbell

#### REQUIREMENTS FOR ADMISSION

See table 2.

#### COURSES OF STUDY

There are two regular courses of study

1 The classical course.

2 The literary course, which is similar to the classical with the exception of the ancient classics.

## CLASSICAL COURSE

FRESHMAN CLASS	JUNIOR CLASS
<p>Latin — Livy, Horace's Odes and Epodes; Prose composition Greek — Herodotus; Homer's Odyssey; New Testament; Prose composition French or German — Conversation, grammar, history and literature Mathematics — Algebra and geometry Natural sciences — Physics and botany Rhetoric — Welch's History — Classical and oriental</p>	<p>Latin — Cicero's Tusculan disputations; Prose composition Greek — Plato's Apology and Grito; New Testament; Prose composition French or German, as in freshman class Mathematics — Analytic geometry, calculus Natural sciences — Physiology and zoology Art — History and classification Logic — Whately's History — Modern History of European literature</p>
SOPHOMORE CLASS	SENIOR CLASS
<p>Latin — Horace's Satires and epistles; Tacitus; Prose composition Greek — The tragedians; New Testament; Prose composition French or German, as in freshman class Mathematics — Trigonometry, plane and spheric with applications Natural sciences — Chemistry and mineralogy History — Medieval English literature</p>	<p>Moral science and political economy Mental science and metaphysics Art criticism and esthetics Natural religion — Butler's analogy Astronomy Natural sciences — Geology and paleontology History — Contemporary American constitution Latin and Greek — Weekly exercise in selected passages and reading at sight</p>

Weekly exercises in elocution, vocal music and drawing are required. One hour a week throughout the course is given to Bible study. Lectures are given on various topics in science, art, legal relations of women, Christian evidences, etc. Instruction in household economy is provided.

## REQUIREMENTS FOR GRADUATION

Graduates of the classical course receive the degree of bachelor of arts ; of the literary course, bachelor of letters.

## BUILDINGS

Main buildings, five story brick and stone, built about 1875, total floor area 11,500 sq. ft., eight class rooms, about 180 seats, value \$85,000.

## WELLS COLLEGE

*Aurora*

## HISTORIC SKETCH

Month	Year	For list of date abbreviations see p. 254.
28 Mr	1868	Legislature incorporated Wells Seminary for the Higher Education of Young Women. Power to confer degrees.
19 Jl	1868	College building dedicated. Henry Wells presented to trustees deed of gift presenting building and grounds valued at \$200,000.
29 Mr	1870	On petition of trustees regents changed name to Wells College.

## TRUSTEES

Elected	
1876	President, N. Lansing Zabriskie ..... Aurora
1874	Vice-President, Edward B. Judson ..... Syracuse
1879	Treasurer, Henry A. Morgan ..... Aurora
1881	Secretary, David A. Hale ..... "
1868	Henry Foster, M. D. .... Clifton Springs
1875	Edward S. Frisbee, D. D. .... Aurora
1876	Hon. Charles C. Dwight ..... Auburn
1876	John Hall, D. D. .... New York
1876	Ezra A. Huntington, D. D., LL. D. .... Auburn
1881	Thomson Kingsford ..... Oswego
1883	William Brookfield ..... New York
1884	Theodore Bacon ..... Rochester
1887	Willis J. Beecher, D. D. .... Auburn



## Elected

1887	Mrs Grover Cleveland.....	New York
1887	Helen F. Smith .....	Auburn
1888	Osgood V. Tracy .....	Syracuse

## APPOINTED DURING YEAR

1890	Evans W. Mosher.....	Aurora
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## ADMINISTRATION

Figures in column at left give first year of service in Wells.

1875 President, Edward S. Frisbee, M. A., D. D.

M. A. 1865, D. D. 1878; Instructor in classical department Williston Seminary 1860-2; Union Theological Seminary 1862-3; Principal Amherst High School 1863-7; Principal Northampton High School 1867-72; Principal Binghamton High School 1872-5; Published Syllabus of Seelye's Hickok's Mental and moral science.

1875 Lady Principal, Helen F. Smith, M. A., L. H. D.

M. A. Lawrence University (Wis.) 1878; L. H. D. Syracuse University 1889.

1881 Treasurer, Henry A. Morgan.

1883 Librarian, Annie A. Wood.

Diploma from Cooper Union.

Registrar, Evans A. Mosher.

## INSTRUCTION

Figures in column at left give first year of service in Wells and years spent in teaching.

1875 Edward S. Frisbee, M. A., D. D. President. Mental, Moral  
30 and Political Science, Biblical Literature.

See also "Administration."

1875 Helen F. Smith, M. A., L. H. D. Senior English Literature.

14 See also "Administration."

22 Mlle Marie Jeanneret. French Language and Literature.

Educated at Neuchatel.

1883 Mary E. Case, M. A. Professor of Latin and Greek.

10 B. A. Oberlin 1881, M. A. 1890; Teacher, Titusville (Pa.) High School 1881-3.

Annie A. Wood. Drawing and Painting, and History of Art.

See also "Administration."

- 1884 <sup>1</sup>Elise Piutti. German Language and Literature.  
6 Educated at Erfurt, Germany.
- 1886 K. Antoinette Acer, B. A. Mathematics.  
4 B. A. Vassar 1885.
- 1888 Jasper Warren Freeley, M. S. Natural and Physical Science.  
13 B. S. Dartmouth 1878, M. S. 1881; Professor of natural science, Wilmington Conference Academy 1878-80; Professor of natural science, Dickinson Seminary 1880-88.
- 1888 Mrs Max Piutti, B. A. Physical Culture.  
3 B. A. Wells College 1877.
- Jane S. Watson. History.  
22 Educated at Oswego Normal School.
- 1890 Caryl Florio. Director of Music.  
20 Educated in Germany.
- Isabella M. Elwell, A. R. M. Piano.  
21 Educated at Royal Academy of Music, London.
- 1889 Wm. D. McClintock, M. A. English Language and Literature.  
9 B. A. Kentucky Wesleyan College 1878, M. A. 1881; Scholar in English, Johns Hopkins 1880-82; Professor of English, Chautauqua College 1881-; \*Member Modern Language Association.
- 1889 <sup>2</sup>Jeanet E. Loomis, B. A. German Language and Literature.  
2 B. A. Wells College 1889.
- 1884 C. T. Winchester, M. A. Lecturer on English Literature,  
18 342 High st., Middletown, Ct.  
B. A. Wesleyan University 1869, M. A. 1872; Librarian Wesleyan University 1869-73, Professor of rhetoric and English literature 1873-.
- 1890 Mrs W. D. McClintock, M. A. Rhetoric and the English  
11 Language.  
B. A. Millersburg Female College 1878, M. A. 1885; Professor of Latin, Millersburg Female College 1880-82, Professor of English 1882-6; Teacher of Anglo-Saxon, Chautauqua College 1886-.

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<sup>1</sup> Absent during year, studying in Europe.

<sup>2</sup> During Miss Piutti's absence.

## VACANCIES

Henry Jacobus. Director of music. Resigned 17 Je 1890.

## APPOINTED DURING YEAR

Caryl Florio. Director of music.

Mrs W. D. McClintock, B. A. Rhetoric and the English language.

## PROMOTIONS

In salary alone

Wm. D. McClintock.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowship reported.

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

There are three courses of study — the regular, the scientific and the literary.

*English composition* — Special attention, in accordance with a systematic and progressive plan, is given to English composition in each course, during the entire period of instruction. A class room exercise once a week, and compositions or essays at stated intervals, with interviews with the instructor for consultation and criticism, are required of all students, as long as they are connected with the college.

*Free hand drawing*, to the extent of two or three lessons a week for not less than one semester, is free to all, and is required as a necessary preparation for the study of botany and other natural and physical science.

*Chorus singing*, twice a week, is required of all students who have sufficient voice and musical ability to be profited by it.

*Languages* — The languages taught in the several courses are Latin, Greek, French and German.

In the regular and literary courses, Latin and one of the other three languages are required through freshman year. In addition, one language, to be selected by the student, is required through the sophomore and junior years.

In the scientific course, an equivalent study of a modern language takes the place of Latin in the freshman year. In other respects, the language requirement is the same as in the other courses.

### Art

*Music* receives special attention. The instruction which is based upon the methods of the best European teachers, is given with a view to the appreciation of all that is truly beautiful and pure in art. Technical proficiency is made to serve high artistic purposes.

To make its students not only good performers but musical generally, the department, always maintaining the highest standard, employs the following means :

- 1 The study of piano playing, mainly after the methods of the Stuttgart and Kullak conservatories, including the study of classical and modern music, playing at sight, and ensemble playing.

- 2 The culture of the voice, and the systematic study of the best German and Italian songs and operatic compositions.

- 3 Lectures on music in its physical and psychological effects, its history, the biography of its noteworthy composers, their styles of composition, etc.

- 4 The study of harmony and composition, enabling the pupil to understand the mechanical construction of whatever she hears and performs.

- 5 Chorus singing (sémi-weekly), in which all students of the college participate.

- 6 Concerts, by the teachers, and by artists from abroad. These concerts, an important feature in the course of study, give valuable aid in developing taste, the programs being selected not to amuse a promiscuous audience but to afford opportunity for study.

- 7 Recitals, by teachers and pupils, the programs being arranged to give a clear view of the development of music.

Drawing and painting, with other branches of the fine arts are provided for.

Studio work—The course of instruction in the studio is thorough and systematic, including :

- 1 Charcoal drawing of geometric solids, vases, casts of ornament and foliage, and the antique.

- 2 Oil and water color painting from flowers and still life.

- 3 Out-door sketching in charcoal and in color.



4 Lectures on perspective.

5 Studio talks and readings on the great works of sculpture and painting, and on the various art methods pursued by the great masters of all ages.

Free hand drawing is taught in classes which are open to all who wish to join them, and is required as a preliminary to certain studies in natural science in the regular course.

History of art — This subject, which belongs to the last year of the regular course of study, is further supplemented by a course of lectures, descriptive and critical, with sciopticon illustrations, on the leading styles of architecture, and other topics connected with the history of art.

## REGULAR COURSE — FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Hours per Week	REQUIRED	Hours per Week	REQUIRED
4	Wells' Algebra	4	Wentworth's Solid and spherical geometry
4	English history — Textbook, topical study, with library work and readings from standard authors	4	Botany
4	Latin — Livy, Prose composition	4	Latin — Horace with metrical analysis
1	Physiology and hygiene	1	English, as in first semester
1	English — Studies and practice in style; Four essays during year		Freehand drawing required of students of natural history, may be taken by others
	<p> <b>ELECTIVES</b>            Greek — Homer's Odyssey            French — Histoire de France; Prominent French authors of the 19th century; Reading modern and contemporary works, composition, conversation; Translating English into French; Class work conducted in French during the entire course            German — Lessing's Emilia Galotti; Undine; Exercises, memorizing, reading and relating; Wenckebach's Deutscher Anschauungs-Unterricht; Conversation in German throughout the entire course; Class work conducted in German during the entire course         </p>		<p> <b>ELECTIVES</b>            Greek — Herodotus; Xenophon's Memorabilia            French — The work of first semester continued            German — Undine; Marie Stuart; Biographies of Lessing, Goethe, Schiller, Richter, Uhland, Heine; Wenckebach's Deutscher Anschauungs-Unterricht; Composition and conversation         </p>

<sup>1</sup>One required. Unless otherwise specified all electives are understood to be with recitations every other day.

## REGULAR COURSE — SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
Hours per week		Hours per week	
4	REQUIRED Chemistry—Elementary chemical philosophy; Non-metals; Text-book, lectures and laboratory work	4	REQUIRED Wentworth's trigonometry, plane and spherical
4	History—Medieval; Library work, recitations, essays	4	History Modern; Library work, recitations, essays
4	Rhetoric	4	English literature—Introduction to the study of literature
1	English, as in freshman year	1	English, as in first semester
4	<sup>1</sup> ELECTIVES Old English—Anglo-Saxon, and the history of the English language Latin—Quintus, Germania and Agricola Greek—Euripides French—Study of the origin of the French language, and of noted French writers from the 11th century; Reading classical, especially dramatic, works; Idioms, composition, translating English into French German—Geschichte der Literatur bis zum 19. Jahrhundert; Gedichte; Iphigenia auf Tauris; Wenckebach's Deutscher Anschauungs-Unterricht; Conversation	4	<sup>1</sup> ELECTIVES Old English, as in first semester Chemistry—The metals, qualitative analysis; Lectures and laboratory work Mineralogy—Determination of species by use of blowpipe and reagents Latin—Juvenal; Cicero's De senectute Greek—Plato French, as in first semester German—Die Literatur des 19. Jahrhunderts; Special study of Goethe and Schiller; Wenckebach's Deutscher Anschauungs-Unterricht; Goethe's Faust

<sup>1</sup> One required. Unless otherwise specified recitations every other day.

# REGULAR COURSE — JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Hours per Week		Hours per Week	
4	English literature — Historical and critical study of the English language and literature, with the characteristic features of successive periods; Collateral reading, and study of representative authors	4	English literature, as in first semester
5	Physics — Dynamics, sound, heat; Text-book, lectures, recitations, laboratory work	4	Physics — Light, magnetism, electricity; Experimental lectures, laboratory work and recitations. First half of the semester
1	English — Studies and practice in invention, the analysis of themes, and the elements of criticism; Four essays during the year	4	Natural history — Orton's Comparative zoology; Systematic zoology; Lectures, dissections, recitations. Last half of the semester
4	Mathematics — Wentworth's Analytical geometry History — Origin and growth of the English constitution; Text-book, library work, essays and discussions Logic — Jevons' Elements of logic, with study of illustrations from English literature Latin — Quintillian; Cicero de Officiis Greek — Æschylus, Agamemnon French — Standard French prose and poetry German — Die Literatur des 19. Jahrhunderts; Nathan der Weise; Tasso; Heine's Gedichte; Uhland's Gedichte; Des Knaben Wunderhorn. Composition and conversation Music — Instrumental or vocal, including the study of harmony Art — Studio work	1	English — Work of the first semester continued
	<sup>1</sup> ELECTIVES	1	<sup>1</sup> ELECTIVES
	Mathematics — Differential and integral calculus; History of mathematics History — Constitutional history of the United States Political economy — Text-book, lectures and discussions, library work Latin — Plautus; Pliny's Letters Greek — Demosthenes French — Standard French prose and poetry German — Music and art, as in first semester		Mathematics — Differential and integral calculus; History of mathematics History — Constitutional history of the United States Political economy — Text-book, lectures and discussions, library work Latin — Plautus; Pliny's Letters Greek — Demosthenes French — Standard French prose and poetry German — Music and art, as in first semester

<sup>1</sup> Two required, or three if all elected are half-studies.



## REGULAR COURSE — SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Hours per Week	REQUIRED	Hours per Week	REQUIRED
5	Mental science — Seelye's Hickok; Recitations, readings, discussions, library work, essays	3	Moral Science — Seelye's Hickok, with References to other Standard Authorities
1	English — Science of description, narration, exposition, argumentation; Four essays during year	2	Evidences of Christianity — Text-book, Recitations, Library Work, Discussions
5	Geology — Dana's; Lectures, lithology, laboratory work	1	English — Work of the first semester continued
5	History of art	4	<sup>1</sup> ELECTIVES
	English literature — Critical study of selected authors, with lectures		Astronomy — Textbook, with lectures and recitations
	History of civilization — Guizot, with lectures and library work		History of art — Textbook, library work, lectures and recitations
	History of philosophy — Schwegler. Selected topics, discussions and readings		English literature — Critical study of selected authors, with lectures
	Physical geography — Lectures and library work		History of Philosophy — Schwegler; Selected topics, discussions and readings
	Latin — Seneca; Cicero de Natura Deorum, and de Divinatione		Political science — Selected topics, discussions and readings
	Greek — Sophocles, Edipus Tyrannus		Science of religion — Comparative study of the religions of the world; Lectures and readings
	Music — Instrumental or vocal, including the study of harmony. Equivalent to a half-study		Latin — Lucretius
	Art — Studio work. Equivalent to a half-study		Greek — New testament
			Music — Instrumental or vocal, including the study of harmony
			Art — Studio work

<sup>1</sup> Ten periods required

## SCIENTIFIC COURSE

FRESHMAN YEAR	JUNIOR YEAR
<p>FIRST SEMESTER</p> <p>Algebra, English history, Physiology and hygiene and English, as in regular course</p> <p>French and German — If the full preparatory work has been accomplished in but one of these languages, the other may be taken from the beginning</p> <p>SECOND SEMESTER</p> <p>Geometry, Botany, Freehand drawing and English, as in regular course</p> <p>French and German, as in first semester</p> <p>SOPHOMORE YEAR</p> <p>FIRST SEMESTER</p> <p>Chemistry, Medieval history, Rhetoric and English, as in regular course</p> <p>French or German — Every other day</p> <p>SECOND SEMESTER</p> <p>Trigonometry, Modern history, or English literature, Chemistry and mineralogy and English, as in regular course</p> <p>French or German — Every other day</p>	<p>FIRST SEMESTER</p> <p>English literature — Physics, mathematics and English, as in regular course</p> <p>Elective — In addition, any one elective from the junior or previous years of the regular course</p> <p>SECOND SEMESTER</p> <p>English literature; Physics and Zoology; Mathematics; English — As in the regular course</p> <p>Elective — As stated for the first semester</p> <p>SENIOR YEAR</p> <p>FIRST SEMESTER</p> <p>Mental science, Geology and English as in regular course</p> <p>Elective — Any one (full study) elective or two (half study) electives from the senior or previous years of the regular course</p> <p>SECOND SEMESTER</p> <p>Moral science, Evidences, Astronomy and English, as in regular course</p> <p>Elective — As in the first semester</p>

## LITERARY COURSE

FRESHMAN YEAR	JUNIOR YEAR
<p>FIRST SEMESTER</p> <p>English literature, 19th century writers; Lectures and class study of selected masterpieces</p> <p>English history, Latin, Physiology and hygiene and English, as in regular course</p> <p>Greek or French or German — Every other day</p> <p>SECOND SEMESTER</p> <p>English literature, as in first semester</p> <p>Botany, French and drawing, Latin and English, as in regular course</p> <p>Greek or French or German — Every other day</p>	<p>The same as the corresponding year of the regular course</p>
<p>SOPHOMORE YEAR</p> <p>FIRST SEMESTER</p> <p>Old English, Medieval history, Rhetoric and English, as in regular course</p> <p>Latin, Greek, French or German — Every other day</p> <p>SECOND SEMESTER</p> <p>Old English, English literature, Modern history and English, as in regular course</p> <p>Latin, Greek, French or German — Every other day</p>	<p>SENIOR YEAR</p> <p>The same as the corresponding year of the regular course, except that English literature is required, instead of being elective, during the year</p>

## REQUIREMENTS FOR GRADUATION

Students who successfully complete the regular course receive the degree of bachelor of arts; those who complete the scientific course, the degree of bachelor of science; and those who complete the literary course, the degree of bachelor of literature.

Any graduate from the regular course of at least two years' standing may receive the degree of master of arts, on furnishing satisfactory evidence by examination or thesis, of having completed a year's course of advanced study prescribed or approved by the faculty.

## BUILDINGS

Main building, four story brick, built 1890, total floor area about 69,000 sq. ft, eight class rooms, 100 seats, value \$125,000. Chapel, dormitory, library and gymnasium, in main building. Science and art building, three story brick, built 1879, total floor area, about 10,200 sq. ft., 13 class rooms, value \$20,000. Laboratory and museum included in science and art building. President's house, two story brick, value \$10,000. Professor's house, two story wood, value \$5,000. Laundry, etc., one story brick, value \$2,000.

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# CLAVERRACK ACADEMY AND HUDSON RIVER INSTITUTE

*Claverack*

CONSISTING OF

Collegiate Department

Academic Department

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1777	Private academy called Washington Seminary undertaken at Claverack.
	1825	Washington Seminary changed to Common School.
	1829	Claverack Academy started by Rev. Richard Sluyter.
25 Ap	1831	Legislature incorporated Claverack Academy.
5 F	1839	Regents admitted the academy.



Month Year

14 Je 1854 Regents incorporated Claverack Academy and Hudson River Institute.

1868 "Form system" after plan of English schools adopted.

4 Je 1869 Regents conferred upon the institution the power of granting degrees under proper regulations.

## TRUSTEES

Elected

1854	President, Milton Martin	Claverack
1880	Vice-President, Thomas Wilson, M. D.	"
1854	Treasurer and Secretary, Frederick N. Mesick	"
1889	Assistant Secretary, William McAfee	"
1861	John Mesick	"
1880	Friend Miller	"
1884	A. Frank B. Chace	Hudson
1885	Arthur H. Flack	Claverack
1885	Jacob P. Mesick	"
1887	Louis A. Bristol	"
1887	Benjamin S. Mesick	"
1889	Henry R. Heath	Brooklyn

## VACANCIES

Rev. W. F. Hatfield, D. D., Poughkeepsie, died Je 1890

David Crego, Claverack, died Ag 1890

## COLLEGIATE DEPARTMENT

*Claverack*

## ADMINISTRATION

Figures in column at left give first year of service in Claverack.

1880 President and lessee, Rev. Arthur H. Flack, M. A.

Educated at Boston University.

1868 President, William McAfee, M. A.

Educated at Yale.

1884 Lady Principal, Mrs Mary B. Van Petten, M. A.

1890 Matron, Florence E. Kinney.

Educated at Wellesley.

1887 Secretary, Grace B. Flack, B. A.

Educated at Claverack.

Care of small boys, F. H. E. Richards.

## INSTRUCTION

Figures in column at left give first year of service in Claverack and years spent in teaching.

1880 Rev. Arthur H. Flack, M. A. President and lessee, and  
10 Professor of Mental and Moral Philosophy and Military Science.

See also "Administration."

1868 William McAfee, M. A. President and Professor of Greek  
26 and Latin.

See also "Administration."

1883 Charles W. Landon. Professor of Vocal Music.  
23

1886 Rev. J. B. Van Petten, Ph. D. Professor of History and  
30 Elocution.

Educated at Wesleyan.

1871 Samuel Rusk, M. S. I. E. Professor of Natural Sciences and  
20 Book-keeping.

Educated at Columbia School of Mines.

1885 Bernard M. Chase. Professor of Violin and Cornet.  
20

1867 Lama Neely. Teacher of Oil Painting, Crayoning, Drawing  
23 and Sculpture.

Educated at Cooper Union.

1882 Mrs Flora McAfee, B. A. Teacher of Latin.  
8 Educated at Claverack.

1883 Mrs Julia E. Landon. Teacher of Piano-Forte.  
15

1884 Mrs Mary B. Van Petten, M. A. Lady Principal and  
23 Teacher of French and English Literature.

See also "Administration."

1887 Grace A. Flack, B. A. Teacher of German.

3 See also "Administration."

1889 Mrs Belle M. Lewis. Teacher of Piano-Forte and Harmony.

15 Educated at New England Conservatory of Music.

1889 Nellie M. Lewis. Teacher of English and Mathematics.

5 Educated at Brockport Normal School.

1887 Nellie A. Grant, Mus. B. Teacher of Calisthenics and  
3 Piano-Forte.

Educated at Claverack.

1890 Anna M. Benedict. Teacher of English.

Educated at Mount Holyoke.

#### VACANCIES

1880 Mrs Mary B. Roberts, Preceptress. Resigned 15 Je 1890.  
17

1889 Mrs Mary E. Joyce, Matron. Resigned 15 Je 1890.

1

#### APPOINTED DURING YEAR

Anna M. Benedict, Teacher of English.

Florence E. Kinney, Matron.

#### PROMOTIONS

In both title and salary

Mrs Mary B. Van Petten, M. A. Lady principal from teacher  
of French and English Literature.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships, or requirements for admission reported.

#### COURSES OF STUDY

##### DEPARTMENTS OF INSTRUCTION

*Common English* — The common English branches are taught by the oldest and most experienced of the teachers. There are always at least three classes in each of these branches, and more when the necessity of perfect classification requires.

*Natural and physical science* — This department includes astronomy, botany, chemistry, geology, meteorology, physical geography, physiology and hygiene, and physics.

Instruction is given by means of recitations, lectures and experiments. The method of instruction is varied to meet the requirements which long experience has shown to be best suited for impressing pupils with the particular subject under consideration.

The institution has a good collection of apparatus, including a telescope of three-inch aperture, working model of the steam engine, large air pump with accessories, stereopticon, photographic cameras and lenses with complete equipment for practical work, compound microscope, spectroscope, mechanical powers, Edison phonograph, surveyor's transit, green mercurial barometer, induction coil, Holtz electrical machine, telegraph instruments, various kinds of galvanic batteries, and an abundance of all necessary chemicals.

Special instruction will be given to those desiring to pursue a course in qualitative chemical analysis.

*Surveying* — To meet an oft-desired want, we have a special course of thirteen weeks in surveying. Any one fairly versed in mathematics can by this means obtain a practical knowledge of the subject.

The instruction includes actual work, with all necessary explanation in surveying with the compass, transit and the theodolite, plotting, map drawing, and trigonometrical measurements of heights and distances.

*Modern languages* — In French the natural or Pestalozian method is used, combined with a critical study of grammar. The design is to give an easy command of the idioms of the language, and to supply them with an extensive vocabulary of words and expressions in common use among the French people.

Grammar is also taught to enable the learner to speak and write accurately. The course of study includes the works of Moliere, Racine, DeStael, Fleury and other standard authors, thus giving the pupils a good knowledge of French literature. Classes for conversation are formed for the more advanced students, in which literature and general topics are discussed.

The same general method is pursued in teaching German. Special pains are taken with beginners in pronunciation, drill in grammar, the writing of English into German and accurate literal translation. Advanced pupils are reviewed in grammatical analysis, and read from Grimm, Muller, Lessing, Goethe, Schiller and others.



*Classics* — Students in the classical course are carefully taught in the rudiments of both Greek and Latin, by teachers of long experience. Correct pronunciation is daily practiced with constant blackboard exercises, so as to familiarize the student with accurate work, especially in declensions, conjugations, accents and irregular forms, and the making of Greek and Latin in the style of the author under consideration, with a careful attention to the scanning of the poetry of both languages, and the rules of prosody. Exercises are also frequently held in the sight translation of easy Latin and Greek, and special attention is given in the advanced classes to the interpretation of the thought of the author as well as the mere translation of the words.

*Art* — Portrait and figure painting from life or photographs, in oil or water colors a specialty. Landscape, fruit and flowers from nature, in oil or water colors. Designing and composition, modeling in clay from life and photographs, crayoning, pastelle and charcoal sketching, perspective, architectural, mechanical and free-hand drawing, artistic anatomy, and drawing in India ink are thoroughly developed by the most modern theories of teaching. Students having finished the course receive the art diploma.

*Normal* — There are at least two teachers' classes instructed each year. This course is made to conform to the requirements of the department of public instruction of the state of New York, and includes reading, spelling, geography, grammar, arithmetic, methods of teaching, school economy and government, American history, physiology and hygiene and civil government. Pupils passing satisfactory examinations upon these subjects are granted a teachers' certificate from the school commissioner under the regulations of the New York State uniform examinations.

FRESHMAN YEAR	SOPHOMORE YEAR	JUNIOR YEAR	SENIOR YEAR
<p>Algebra—Wells  Latin—Translation at sight  Caesar, four bks.  Physiology—Steele  General history—Barnes  Essays and recitations  Bible</p> <p>OPTIONAL  French grammar—Magill  German grammar—Comfort  Greek lessons—White</p>	<p>Geometry—Wentworth  Virgil—Aeneid and eclogues  Latin—Translation at sight  Physics—Steele  Chemistry—Cooley  Rhetoric—Hill  History of Rome—Leighton  Essays and recitations  Bible</p> <p>OPTIONAL  German—Spanhoofd, Grimm, Muller  French—Litterature Francaise  Greek—Goodwin, Xenophon's Anabasis</p>	<p>Trigonometry—Wentworth  Sallust—Cataline  Essays and recitations  Cicero—Allen and Greenough  Botany—Wood  Latin prose composition  English literature—Shaw  Geology—Steele  Civil government—Young  Bible</p> <p>OPTIONAL  Greek—Homer's Iliad  German—Schiller, Goethe  French—Racine, George Sand</p>	<p>Grecian history—Barnes  Astronomy—Lockyear  Moral philosophy—Wayland  Mental philosophy—Haven  Political economy—Perry  Criticism of English and American authors  Bible</p> <p>OPTIONAL  Horace—Odes  Greek Testament—Wescott and Hort  Evidences of Christianity—Paley  Kames' Elements of criticism—Boyd  Essays and recitations</p>

## REQUIREMENTS FOR GRADUATION

Ladies completing the collegiate course of study receive the degree of mistress of liberal arts.

## BUILDINGS

Main building, five story wood, built 1854, floor area 45,500 sq. ft., five class rooms, 315 seats, value \$36,700. Chapel in main building, floor area 1,875 sq. ft. College Hall (class room building) two story wood, built 1864, floor area 8,000 sq. ft., two class rooms, 90 seats, value \$6,000. Dormitory in college hall, floor area 900 sq. ft. Art room in main building, floor area 850 sq. ft. Library in main building, floor area 210 sq. ft. Laboratory in college hall, floor area 900 sq. ft. Gymnasium in college hall, floor area 900 sq. ft.

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## NORMAL COLLEGE OF THE CITY OF NEW YORK

*Park av. and 68 st. New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

9 Je 1888 Incorporated by legislature ; board of education of New York and president of college to be *ex-officio* trustees.

## TRUSTEES

President, John L. N. Hunt, M. A., LL. D. . . . 207 W. 69 st.  
 Secretary, Arthur McMullen, M. A. . . . . 146 Grand st.  
 Mrs Mary N. Agnew  
 Frederick W. Devoe  
 James W. Gerard  
 William H. Gray  
 Randolph Guggenheimer, LL. B.  
 Charles L. Holt  
 Charles B. Hubbell, LL. B.  
 Thomas Hunter, Ph. D.

David H. King, jr  
 William Lummis  
 James W. McBarron  
 Thaddeus Moriarty  
 Joseph F. Mosher  
 Miles M. O'Brien  
 Edward H. Peaslee, M. D.  
 Mrs Sarah H. Powell  
 Samuel M. Purdy  
 Adolph L. Sanger, M. A.  
 Edward J. H. Tamsen  
 Ferdinand Traud  
 Mrs Clara M. Williams

#### VACANCIES

Henry Schmidt, N. Y. City, term expired 1 Ja 1890  
 Henry L. Sprague, " " 1 Ja 1890  
 William A. Cole, died  
 Frederick Kuhne, "  
 Grace H. Dodge, resigned  
 Robert M. Gallaway, "  
 Dewitt J. Seligman, "  
 J. Edward Simmons, "  
 Jacob D. Vermilye, "  
 H. Walter Webb, "

#### ADMINISTRATION

Figures in column at left give first year of service in Normal College.

1870 President, Thomas Hunter, M. A., Ph. D.

M. A. Columbia 1866; Ph. D. Williams 1877.

Registrar and librarian, Sarah E. H. Hall.

Secretary, Edward H. Way.

1870 Superintendent, Eliza Woods. 363 W. 15 st.

Teacher in New York city public schools 1854-70.

Superintendent of training department, Isabelle Parsells.

Janitor, Denis Shane.

Engineer, John Howell.



## INSTRUCTION

Figures in column at left give first year of service in Normal College and years spent in teaching.

1870 Thomas Hunter, Ph. D. Professor of Intellectual Philosophy.  
41 See also "Administration."

1870 Arthur Henry Dundon, M. A. Professor of Latin and  
29 English Literature. Creston av., Fordham.

M. A. St John's College.

1870 Joseph Anthony Gillet, B. A. Professor of Mathematical  
26 and Physical Science, 109 E. 76 st.

B. A. Harvard 1863; Joint author with Wm. J. Bolfe of Cambridge Course of Physics, 1865; also New text-book in natural philosophy and in astronomy, 1882; also First book in natural philosophy and First book in astronomy 1883.

1870 Charles Albert Schlegel, Ph. D. Professor of German.  
20 Europe.

Edward Hartsinck Day. Professor of Natural Science.

1875 Eugene Aubert, B. A., O. d'A. Professor of French  
39 Language and Literature, 142 W. 47 st.

B. A. University of France, Academy of Strasburgh 1849; Officier d'Academie by decree of the Minister of Public Instruction, Fine Arts and Public Worship, Paris, 1885; Author *Echos et reflets*, *Elans et tristesses*, *Litterature Française*, *Colloquial French drill*.

1870 George Mangold, Mus. D. Professor of Music, 236 E.  
32 18 st.

1870 Eliza Woods. Professor of Ethics.

36 See also "Administration."

Lavinia M. Holman. Tutor.

1870 Mary A. Mathews. Tutor in Mathematics, 252 W. 132 st.  
32 Graduated at Rutgers 1885.

1870 Helen G. Morgan. Tutor in Mathematics, 608 Pavonia av.,  
43 Jersey City.

1870 Laura E. Leal. Tutor in Mathematics, 803 Lexington av.  
39

1870 A. Caroline Covell. Tutor in charge of Drawing Department,  
25 Certificate from Cooper Union 1865; Taught 2 years in studio National Academy of Design, New York city; Taught 2 years in New York city public schools.

Mary Willard. Tutor.

- 1870 Jessie McGregor. Tutor in Physics, 363 W. 15 st.  
36
- 1870 Elfrida De Wailly. 532 E. 119 st.  
26
- 1875 Mary S. Kennedy. Tutor, 124 W. 126 st.  
21 Teacher in New York city public schools.
- 1871 Jenny B. Merrill. Tutor in Pedagogy, 105 E. 60 st.  
19 Graduated from Normal College 1871; Published Little folks Bible gallery, 1880; Bible stories and pictures, 1882; Bible talks, 1886; Children's Sunday school quarterly, 1881; Edited Songs for little folks, 1876.
- 1873 Honora McDonough. 953 Lexington av.  
18
- 1874 Laura Friend. Tutor in History, 795 Lexington av.  
19
- 1874 Frederica J. Constantini. Tutor in German, 153 E. 49 st.  
18
- 1875 Emily I. Conant. Tutor, 42 W. 48 st.  
20 Member of the American Association for the Advancement of Science.
- 1875 Betsey B. Davis. Tutor in Latin, 25 W. 119 st.  
16
- Marguerite Merington. Tutor.
- 1877 Elizabeth R. Beckwith, B. A. Tutor in Latin and Greek,  
21 101 E. 87 st.  
B. A. Vassar 1868; Teacher in High School, Freeport Ill. 1871-2; New York city public schools, 1874-7; Member Association of Collegiate Alumnae.
- 1878 Felicie Diaz. Tutor in French, 23 W. 17 st.  
18 Diploma from Academy of Toulouse, France, 1866.
- 1880 Emma M. Requa. Tutor in Mathematics and Calisthenics,  
20 Harrison.
- 1880 Eleanor Boesé. Tutor in English and History, 140 E.  
12 38 st.
- 1882 Marguerite Liebré, 1228 Madison av.  
14 Diploma of University of France 1877.
- 1883 Florentine E. Artmann. Tutor in German, 1120 Park av.  
12

- 1883 Eva B. Hickinbottom. Tutor in Latin, 524 Grand st.  
8
- 1885 Grace B. Beach. Tutor in Mathematics and Astronomy,  
6 20 E. 120 st.  
Helen C. Gaskin. Tutor.  
Alice B. Rich. Tutor.
- 1886 Mabel F. Randolph. Tutor in Drawing, 180 W. 59 st.  
4
- 1887 Margaret B. Wilson. Tutor in Physiology, Yonkers.  
6
- 1887 Christable Flood. Tutor in Latin, 849 E. 165 st.  
8
- 1888 Helen Gray Cone. Tutor in English Literature, 846 E.  
2 164 st.

Author Oberon and Puck: verses grave and gay, 1885; Associate editor Pen portraits of literary women, 1885; Author of article Women in American literature, in Woman's Work in America, 1890.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Mary E. Bole  
Salutatory, Gertrude M. Smith  
3d honorary essay, Lena Davidson  
4th " " Inez Cohen  
5th " " Alice M. Isaacs  
6th " " Lilian Linsley  
7th " " Matilda W. Miller

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Ottendorfer gold medal (German), Matilda W. Miller.....	\$60
Ottendorfer silver medal (German), Sarah Spear.....	20
Kelly silver medal (methods of teaching), Inez Cohen.....	10
Kelly bronze medal (methods of teaching), Mary E. Bole..	5
Kane gold medal (physiology), Mary E. Bole.....	50
Hunt gold medal (Latin), Emma G. Mateer.....	50
First prize (French) gold watch, Mary E. Bole.....	75
Second prize (French) by Hon. Wm. Wood, Fannie McDowell	40

	Value
Dewitt J. Seligman prize (Eng. literature), Belle Rauch.....	50
Clara M. Williams prize (Eng. literature), Amanda Lang...	20
Manual training scholarship, Ella Bayles.....	300
“ “ Esther J. Brewster .....	“
“ “ Adelaide L. Carle.....	“
“ “ Lilian M. Elliot .....	“
“ “ Martha Goldberg.....	“
“ “ Blanche Hirsch.....	“
“ “ Minnie Ikelheimer.....	“
“ “ Annie Kubeschta .....	“
“ “ Annie Levy .....	“
“ “ Lillie C. Levy.....	“
“ “ Emma G. Mateer .....	“
“ “ Fannie McDowell.....	“
Kindergarten scholarship, Carrie Adler.....	200
“ “ Mary Knox.....	“
“ “ Stella Maynz .....	“
“ “ Matilda Miller.....	“
“ “ Mary Nolen .....	“
“ “ Jessie Winterton .....	“

## REQUIREMENTS FOR ADMISSION

See table 2.



## COURSES OF STUDY

CLASSICAL COURSE (INTRODUCTORY YEAR SAME AS NORMAL COURSE)		NORMAL COURSE	
Hours a Week		Hours a Week	
FRESHMEN — SECOND YEAR		INTRODUCTORY YEAR	
FIRST TERM		FIRST TERM	
3	History — England and contemporaneous events in France; Outline of modern Europe; History and constitution of U. S.	3	History — Ancient Greece and Rome
3	Latin — Sallust, Herberman; Grammar, Harkness; Colloquial exercises, D'Ooge	1	Grammar — Analysis; Errors in speech; Synthesis — Bain
4	Greek — Grammar, Goodwin; White	4	Latin — Principia Latina, part 1, Smith; Elementary grammar, Harkness
2	Algebra — Newcomb, books 8-10	4	French — Progressive and practical course, part 1; Regular verbs; Translation; Reading; Colloquial exercises, Duffet, Sauvœur and Aubert
2	Geometry — Newcomb, books 6-8	4	German — Grammar; Exercises in reading and writing, Schlegel
2	Botany — Systematic and physiologic, Gray	3	Algebra — Elementary course, Newcomb
2	Chemistry — Elementary course, Remsen; Lectures	2	Geometry — Books 3 and 4, Hunter
			Astronomy — Elementary, Gillet and Rolfe
SECOND TERM		SECOND TERM	
3	History — First term's work continued	4	Composition — Prefixes and suffixes; Letter-writing; Making abstracts and expansion, Murison
3	Latin — Virgil, books 1-2; Prosody, Frieze; Grammar; Composition; Colloquial exercises, Mythology, Harkness	4	Latin — Principia Latina, part 2, Smith; Grammar and exercises, Harkness
4	Greek — Anabasis, Goodwin; Grammar, White	4	French — First term's work continued; Irregular verbs begun
2	Algebra — Advanced course, books 11-12, Newcomb	4	German — Elements of grammar; Conversational phrases, Schlegel
2	Geometry — Books 9-11, Newcomb	3	Algebra — First term's work continued
2	Botany — First term's work continued; Use of microscope, Wood's class-book	2	Geometry — Book 5 Symmetry; Limits, Hunter
3	Chemistry — First term's work continued	2	Astronomy — First term's work continued

CLASSICAL COURSE		NORMAL COURSE	
Hours a Week	SOPHOMORE—THIRD YEAR	Hours a Week	FRESHMAN—SECOND YEAR
	FIRST TERM		FIRST TERM
3	Rhetoric—Including composition, Bain, vol. 1	2	History—Same as classical course
3	Latin—Virgil, books 5-6; Grammar; Composition, Mythology; Colloquies, Frieze	3	Latin—Same as classical course
3	Greek—Xenophon's Memorabilia; Plato's Crito, Winans; Grammar, Goodwin; Prose composition, Arnold	4	French—First year's work continued
1	Algebra—Advanced course completed; Book 13, Newcomb	4	German—Grammar; Translation; Reading; Conversation, Schlegel
3	Trigonometry—Plane, Newcomb	1	Algebra—Problems, Wentworth and Olney
3	Physiology—Elementary course, including hygiene, Martin; Lectures	3	Geometry—Solids, Wentworth
3	Natural philosophy—Dynamics; Hydrostatics; Heat, Everett	3	Botany—Same as classical course
	SECOND TERM		Chemistry—Same as classical course
3	Literature—Writers from Chaucer to Dryden; Poetic selections; Composition, Brooke and Ward	2½	History—First term's work continued
3	Latin—Cicero, first oration against Cataline; Oration for Archais; Composition, Harkness	3	Latin—Same as classical course
3	Greek—Homer, books 1-3; Prose composition; Dictation, Johnson and Arnold	3	French—First term's work continued
4	Trigonometry—Spherical; Application to astronomy; Newcomb and Holden	1	German—First term's work continued; Conversation on the geography of Germany
3	Physiology—First term's work continued	2	Algebra—First term's work continued
3	Natural philosophy—Light; Sound; Electricity, Everett; Lectures	3	Botany—Same as classical course
		3	Chemistry—First term's work continued
			Geometry—Conic sections, Wentworth

CLASSICAL COURSE		NORMAL COURSE	
Hours a week		Hours a week	
JUNIOR—FOURTH YEAR		SOPHOMORE—THIRD YEAR	
FIRST TERM		FIRST TERM	
1	Composition—Bain, vol. 2	3	Rhetoric—same as classical course
2	Literature—English writers from Pope to Thackeray; American writers from Franklin to Bryant, Brooke and Ward	3	Latin—same as classical course
3	Latin—Cicero's select letters; Reading at sight; Composition, Jeans and Harkness	3	French—Grammar; Letter-writing; Translation; Dictation; Literature; 17th century, Noël et Chapsal, Aubert
3	Greek—Demosthenes on the crown; Prose composition; Dictation, Arnold	3	German—Grammar reviewed; Reading; Translation; Conversation on history of Germany, Schlegel
2	Geometry—Plane analytic, Newcomb	2	Psychology—Applied to primary teaching; Object lessons; Manual training, Calkins and Fitch
2	Calculus—Differential, Newcomb	4½	Natural philosophy—Elementary course, Gillet and Rolfe
3	Physical geography—Including its bearing on political history, Maury, Newberry, etc.; Lectures		Foods—Energy and composition of; Lectures
3	Psychology—James and Sully; Lectures		
SECOND TERM		SECOND TERM	
1	Composition—First terms work continued	3	Literature—same as classical course
2	Literature—English and American writers continued; Brooke and Ward; Lectures	3	Latin—same as classical course
3	Latin—Horace, Selections from Odes, epistles and satires; Metrical analysis; Reading at sight; Composition, Wickham	3	French—Grammar; Dictation; Translation; Reading; Conversation; Literature, Noël et Chapsal, Aubert
3	Greek—Euripides' Alcestis; Sophocles' Antigone; Composition; Dictation; Greek drama and literature	3	German—Grammar; Reading; Translation; Conversation; Literature, Schlegel
2	Geometry—Plane analytic, Newcomb	2	Psychology—Elements of, applied to teaching; Object teaching; Manual training, Calkins and Fitch
2	Calculus—Differential, Newcomb	3	Physiology—same as classical course
3	Physical geography—First term's work continued	4½	Natural philosophy—Light and electricity, Gillet and Rolfe
3	Psychology—James and Sully continued		Foods—Composition and preparation of; Lectures

## NORMAL COURSE

Hours & week		Hours & week	
CLASSICAL COURSE			
SENIOR—FIFTH YEAR			
FIRST TERM			
4	History and political economy—Roman life, manners, customs and literature; Essays; Lectures, Fawcett	1	Composition—Same as classical course
3	Latin—Livy, books 21-23; Composition	2	Rhetoric and literature—Same as classical course
3	Greek—Selections from Herodotus and Thucydides; Prose composition; Dictation	3	Latin—Same as classical course
2	Geometry—Solid analytic, Newcomb	3	French—Third year's work continued; Selections on pedagogy; Literature of the 18th century
2	Physical geography—Including the history of the earth, Newberry; Lectures, Le Conte	3	German—Literature; Translation; Selections on pedagogy; Conversation, Schlegel
2	Mechanics—Equilibrium of forces, Bowser	3	Methods—In language, arithmetic, geography and U. S. history, Galkins and Fitch
3	Logic—Jevons	3	Practice—In training department; Model lessons by critic teachers; Lessons by pupil teachers; Criticisms and discussions of lessons; Modeling and carving
		3	Physical geography—With special view of teaching geography. geology and zoology, Maury
		3	Psychology—The intellect; Elements applied to teaching, Janes and Sully; Lectures

## PEDAGOGIC—FOURTH YEAR

## FIRST TERM

Composition—Same as classical course  
 Rhetoric and literature—Same as classical course  
 Latin—Same as classical course  
 French—Third year's work continued; Selections on pedagogy; Literature of the 18th century  
 German—Literature; Translation; Selections on pedagogy; Conversation, Schlegel  
 Methods—In language, arithmetic, geography and U. S. history, Galkins and Fitch  
 Practice—In training department; Model lessons by critic teachers; Lessons by pupil teachers; Criticisms and discussions of lessons; Modeling and carving  
 Physical geography—With special view of teaching geography. geology and zoology, Maury  
 Psychology—The intellect; Elements applied to teaching, Janes and Sully; Lectures

## SECOND TERM

Rhetoric and literature—First term's work continued  
 Latin—Same as classical course  
 French—Grammar completed; Dictation; Translation; Selections on pedagogy; Conversation; Reading; Literature of the 19th century  
 German—Literature; Translation; Composition; Letter-writing; Selections on pedagogy; Conversation; Schlegel  
 History—The educational reformers; Comenius, Pestalozzi, Froebel; Lectures; Moral and physical training of children, Fitch  
 Practice—First term's work continued  
 Physical geography—First term's work continued; Geology and zoology, Maury  
 Psychology—Emotions and will; Applications to morals and school government; Lectures, Janes and Sully



Drawing is given one hour a week throughout either course. In the normal the lessons are of such a nature as to enable teachers to illustrate on the blackboard with ease and facility, and to cultivate the eye and hand with the view of preparing pupils for industrial pursuits. There is also instruction in modeling during the second and third years.

During the freshman, sophomore and pedagogic years of the normal course instruction is given in the science and art of music, including musical notation, relation of musical sounds, musical scales, musical intervals, elements of harmony, exercises in reading and writing music and methods of teaching music.

### REQUIREMENTS FOR GRADUATION

The degree of bachelor of arts shall be conferred on students who complete the classical course.

### BUILDINGS

Main building, four story brick and stone, built 1873. Total floor area 116,125 sq. ft., 52 class rooms, 3,000 seats, value \$500,000. Chapel (with 1,600 seats), library, laboratory and gymnasium are in main building.

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## BARNARD COLLEGE

343 *Madison av.*, *New York*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

- Mr 1889 Trustees of Columbia college gave their approval to a plan for founding a college for women desiring to receive Columbia degrees.
- 8 Ag 1889 Regents chartered Barnard college.
- 7 O 1889 Barnard college formally opened. Instruction given by Columbia professors. Candidates pass the same entrance examination, and at the conclusion of a four years' course receive upon proper recommendation the same degrees as at Columbia. "Educationally considered, Barnard is Columbia. Its only autonomy is administrative and financial."
- 3 Ap 1890 Chemical laboratory opened to students.

## TRUSTEES

Elected

1889 Chairman, Rev. Arthur Brooks,	
M. A. ....	209 Madison av.
1889 Vice-chairman, Mrs Joseph H.	
Choate .....	50 W. 47 st.
1889 Secretary, Hamilton W. Mabie,	
B. A., LL. B. ....	30 Lafayette pl.
1889 Mrs Francis B. Arnold. ....	21 W. 12 st.
1889 Helen Dawes Brown, M. A. ....	142 E. 40 st.
1889 Mrs Virginia S. Brownell, B. A. . .	205 W. 56 st.
1889 Silas B. Brownell, LL. D. ....	139 W. 53 st.
1889 Frederic R. Coudert, M. A., LL. D.	13 E. 45 st.
1889 Noah Davis, LL. D. ....	46 W. 56 st.
1889 George Hoadly M. A., LL. D. ....	33 E. 50 st.
1889 Mrs Alfred Meyer. ....	749 Madison av.
1889 George A. Plympton, B. A. ....	743 Broadway
1889 Mrs John D. Rockefeller. ....	4 W. 54 st.
1889 Jacob H. Schiff. ....	932 Fifth av.
1889 Francis Lynde Stetson, LL. B.	
M. A. ....	576 Madison av.
1889 Mrs James S. T. Stranahan. ....	269 Union st., Brooklyn
1889 Mrs James Talcott .....	7 W. 57 st.
1889 Rev. Henry Van Dyke. ....	10 W. 39 st.
1889 Ella Weed, B. A. ....	715 Fifth av.
1889 Everett P. Wheeler, LL. B., M. A.,	101 E. 71 st.
1889 Alice Williams, B. A. ....	106 E. 38 st.
1889 Mrs Francis Fisher Wood, B. A. .	22 E. 41 st.

## ASSOCIATE MEMBERS

Mrs F. A. P. Barnard : .....	48 W. 59 st.
Mrs Calvin S. Brice. ....	693 Fifth av.
Mrs Vincensio Botta. ....	25 W. 37 st.
Mrs George Canfield .....	32 E. 33 st.
Mrs Henry Clews. ....	9 W. 34 st.
Helen Gray Cone .....	689 E. 164 st.
Mrs Julien T. Davies. ....	18 W. Ninth st.
Julia Delafield .....	475 Fifth av.

## Elected

Mrs John F. Dillon.....	671 Madison av.
Mrs Arthur M. Dodge.....	72 E. 34 st.
Mrs Mary Mapes Dodge.....	170 W. 59 st.
Mrs Richard Ewart .....	
Jeannette L. Gilder .....	Clinton pl.
Mrs Edwin L. Godkin.....	115 E. 25 st.
Mrs Almon Goodwin.....	128 W. 59 st.
Mrs Alfred M. Hoyt.....	934 Fifth av.
Dr Mary Putnam Jacobi .....	110 W. 34 st.
Mrs Francis P. Kinnicutt. ....	42 W. 37 st.
Mrs Charles Lanier.....	39 E. 37 st.
Mrs Herman S. LeRoy.....	28 Seventh av.
Mrs Abbey B. Longstreet.....	
Mrs Seth Low.....	30 E. 64 st.
Mrs Alexander Mitchell .....	St John's River, Florida
Mrs F. P. Olcott.....	4 E. 53 st.
Mrs Courtlandt Palmer.....	117 E. 21 st.
Mrs Roger A. Pryor.....	38 E. 33 st.
Mrs Isaac L. Rice.....	119 W. 72 st.
Mrs Daniel M. Rollins.....	170 W. 59 st.
Mrs C. A. Runkle.....	400 W. 57 st.
Agathe Schurz .....	175 W. 58 st.
Mrs Augustus D. Shepard.....	
Mrs Roswell Smith .....	30 E. 51 st.
Mrs A. B. Stone .....	170 W. 59 st.
Mrs Louis Tiffany.....	7 E 72 st.
Mrs Frederick Ferris Thompson .....	283 Madison av.
Amy Townsend.....	9 W. 25 st.
Mrs Schuyler Van Rensselaer.....	9 W. Ninth st.
Mrs Henry Villard.....	7 E. 72 st.
Mrs Edward Winslow.....	27 W. 53 st.
Mrs Lorenzo G. Woodhouse .....	24 W. 53 st.

## ADMINISTRATION

First year of service in Barnard not reported.

Treasurer, Jacob H. Schiff, New York.

Secretary and Registrar, Elizabeth O. Abbott, New York.

## INSTRUCTION

Figures in column at left give first year of service in Barnard and years spent in teaching.

- 1889 Nathaniel L. Britton, E. M., Ph. D. Teacher of Systematic  
10 Botany.  
See Columbia college, school of arts.
- 1889 William H. Carpenter, Ph. D. Teacher of German.  
8 See Columbia college, school of arts.
- 1889 Bernard F. O'Connor, B. ès L., Ph. D. Teacher of French.  
8 See Columbia college, school of arts.
- 1889 Thomas S. Fiske, M. A., Ph. D. Teacher of Mathematics.  
5 See Columbia college, school of arts.
- 1890 Henry C. Bowen. Teacher of Chemistry.  
19 See Columbia college, school of arts.
- 1889 Nelson G. McCrea, M. A., Ph. D. Instructor in Latin.  
5 See Columbia college, school of arts.
- 1889 Mortimer L. Earle, M. A., Ph. D. Teacher of Greek.  
3 See Columbia college, school of arts.
- 1889 Edmund A. Wasson, M. A., Ph. D. Teacher of English.  
5 See Columbia college, school of arts.
- 1889 Emily L. Gregory, B. L., Ph. D. Lecturer on the Anatomy  
15 and Physiology of Plants; In charge Botanical Laboratory.  
343 Madison av.

B. L. Cornell 1881; Private student Universities of Marburg, Gottingen and Berlin 1881-3; Ph. D. University of Zurich 1866; Associate in Botany, Bryn Mawr College 1886-8; Fellow and Lecturer in Botany, University of Pennsylvania 1888-9.

- 1890 Mary C. Lovering, Assistant in Chemical Laboratory.

Educated at University of Zurich and Massachusetts Institute of Technology.

## APPOINTED DURING YEAR

All the officers of instruction (see above) were appointed during the year 1889-90.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.



## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

## DEPARTMENTS OF INSTRUCTION

## The Greek language and literature

The course of study and the text-books used in the different classes are as follows :

*Freshman class*

*First term* — Homer's *Odyssey* (three bks.) ; Homeric forms and syntax ; scanning and prosody ; exercises in writing Greek.

*Second term* — Herodotus (sixth or seventh bk.) ; exercises in writing Greek.

*Sophomore class*

*First term* — *Medea*, *Alcestis*, *Hippolytus*, *Orestes*, or *Iphigenia in Tauris* of Euripides ; scanning ; exercises in prosody and in writing Greek.

*Second term* — Xenophon's *Memorabilia* (two bks.), or sixth and seventh bks. of Thucydides ; exercises in writing Greek.

Optional classes in sight reading constitute a regular feature of this department.

## The Latin language and literature

*Freshman class*

*First term* — *Odes*, *Epodes* and *Carmen sæculare* of Horace ; review of prosody with the scanning of Horace ; syntax of nouns ; Latin prose composition ; sight reading of Latin.

*Second term* — *De senectute* and *De amicitia*, or the *Brutus* of Cicero ; syntax of the moods ; Latin prose composition ; sight reading of Latin.

*Sophomore class*

*First term* — *Satires* and *Ars poetica* of Horace ; critical study of prosody ; introduction to etymology ; sight reading of Latin.

*Second term* — *Agricola* and *Germania* of Tacitus ; lectures on the Roman historians ; Latin prose composition ; sight reading of Latin.

## German language and literature

*First year*

Whitney's Brief German grammar.

Exercises in translation from English into German.

Thirty pages of text from Whitney's German reader, or Otis' Grimm's Märchen.

*Second year*

*First term* — Schiller's Wilhelm Tell (Buchheim's edition), or Heine's Prosa (Buchheim's edition); Translation from English into German; Whitney's German grammar as book of reference.

*Second term* — Hart's Selections from Goethe's prose, or Riehl's Culturgeschichte novellen; Translation from English into German; Whitney's German grammar as reference.

## French language and literature

*First year*

Chardenal's First French course.

O'Connor's Choix de contes contemporains.

Brachet and Dussouchet's Petite grammaire Française.

*Second year*

Chardenal's Second French course.

Brachet and Dussouchet's Petite grammaire Française, part 2.

E. About, La mère de la marquise.

L. Halévy, L'Abbé Constantin.

Composition.

## English language and literature

The courses of study and the text-books in the freshman and sophomore classes are as follows :

*Freshman class*

*First term* — Lectures on logical analysis, with readings from English poets of the present time.

*Second term* — Lecture on the syntax of modern English, with selections of prose and of poetry.

Through the year, Bain's Rhetoric and composition. Essays are required every two weeks.

*Sophomore class*

Lectures on historical grammar ; analysis of a play of Shakspeare, with special reference to its vocabulary and syntax ; history of the language as a whole ; Text-book, Lounsbury's History of the English language.

*First term* — Lectures on the development of English prose.

*Second term* — On the development of English poetry.

Essays, involving the more difficult laws of sentence and paragraph formation, are required every two weeks.

## MATHEMATICS

*Freshman class*

1. Geometry, plane, solid and spheric, including the solution of original exercises.

2 Conic sections, treated geometrically.

3 Algebra, including determinants, the general demonstration of the binomial theorem, Sturm's theorem, etc.

4 Application of algebra to geometry.

*Sophomore class*

1 Trigonometry, plane, analytic and spheric.

2 Mensuration.

3 Surveying.

Lectures are delivered to each class upon the history, logic and utility of mathematics, and on the models which belong to the department.

## BOTANY

*Special undergraduate course — first year*

1 *Introduction* — Consideration of general biological principles ; elementary principles of vegetable physiology and anatomy ; general technique, including use of instruments, reagents, etc.

2 *Study of types* — After this introduction, the study of the life history of a number of types is taken up. These are selected from each large group of plants and so studied as to give the student a knowledge of the range of the vegetable kingdom. The leading facts in plant anatomy and physiology are also kept in view during the work.

3 *Systematic* — Study of the morphology of the flowering plants and ferns, with exercises in plant dissection and determination.

Lectures and laboratory work throughout the year.

*Second year*

1 *Anatomy and physiology* — Plant anatomy in connection with physiology.

2 *General botany* — The course on types of the first year is now supplemented by a more rapid but thorough study of plants from the remaining groups.

3 *Systematic* — The work of the first year continued and supplemented.

Lectures and laboratory work throughout the year.

## CHEMISTRY

*Sophomore class*

The sophomore class attends one lecture a week during the year in general chemistry, for the purpose of becoming familiar with the most important chemical elements and compounds, and with the general laws of chemistry, as manifested in solids, liquids and gases, and their signification and consequences in homes, vocations and hygiene.

Several hours a week in the presence of an instructor are expected to be spent in practical laboratory work during the year. The aim of this work is primarily to develop critical observation, ingenuity and a cogent logical power. Incidentally a knowledge of physico-chemical qualities of the most important chemical elements and compounds will be acquired, as well as also an ability systematically to apply qualitative analysis to substances of unknown composition.

Special courses in chemistry will be arranged on application.

## HEBREW

*Special undergraduate course — first year*

Principles of Hebrew grammar ; reading of Genesis, chaps. 1-8 in connection with Harper's Elements of Hebrew ; Harper's Introductory method and manual.

*Second year*

During both terms selected portions of the historical books of the Bible will be read in connection with Genesis, Hebräische grammatik, 25th ed. ; Gesenius, Hebräisches und Aramäisches handwörterbuch, 10th ed.



## HISTORY

*Sophomore class*

The course in history for the sophomore year consists in a general survey of the events affecting the development of modern states and modern civilization from the overthrow of Roman dominion in western Europe to the year 1815. The text-book is Myers' Outlines of mediæval and modern history. The work of the first term will include, with introductory and supplementary lectures, part first of that text-book, to page 348, as nearly as may be. In the second term the class will go to page 650.

## GRADUATE DEPARTMENT—DEPARTMENTS OF INSTRUCTION

**The Greek language and literature**

Aristotle — Ethics, Politics, Rhetoric and poetry.

Plato — Gorgias, or three books of the Republic, or other portions equal in extent.

Æschines and Demosthenes — De corona or De falsa legatione.

Thucydides — two bks.

The orations of Antiphon and Andocides, Lysias, Isæus.

Pindar — Olympic and Nemean odes, or Pythian and Isthmian odes.

Æschylus — two plays.

Sophocles — two plays.

The poems of Hesiod.

Theocritus, Bion, and Moschus.

**The Latin language and literature**

1 — Lucretius and the Epicurean philosophy.

2 — Original composition in Latin prose and verse.

3 — Study of Latin inflections.

4 — Rapid reading of Plautus and Terence.

5 — Persius and the Roman satirists.

## HEBREW

*First year*

Hebrew syntax; critical reading and interpretation of parts of the prophetic books (Isaiah, chs. 1-40, or Jeremiah, chs. 1-39).

*Second year*

*First term* — The forms of Hebrew poetry ; reading and interpretation of selections from the psalm-book and from the book of Job.

*Second term* — The Aramaic portions of the Bible, in connection with Kautzsch, *Grammatik des Biblisch-Aramäischen*.

**The German language and literature****1 — German literature —**

*a* — Gervinus, *Geschichte der deutschen Dichtung*, and any two volumes of Freytag's *Bilder aus der deutschen Vergangenheit*.

*b* — Gudrun, Martin's edition.  
Das Nibelungenlied.

*c* — Haym's *Die Romantische Schule*, or Hettner's *Goethe und Schiller*.

**2 — Germanic philology —**

*a* — Lectures on the comparative grammar, structure, morphology, and dialectology of the Germanic languages, with the use of Brugmann — *Comparative Grammar of the Indo-Germanic Languages* ; Paul — *Principles of language*.

*b* (1) — Icelandic — Sweet — *Icelandic primer*, Noreen — *Altisländische und Altnorwegische Grammatik* ; Vigfusson and Powell — *Icelandic prose reader* ; Vigfusson — *Sturlunga Saga*, vol. 1. *Prolegomena*, or

*b* (2) — Gothic : Braune — *Gothic grammar*.

*c* (1) — Old High-German : Wright — *Old High-German primer* ; Braune — *Althochdeutsche Grammatik* ; Braune — *Althochdeutsches Lesebuch*, or

*c* (2) — Middle High-German : Wright — *Middle High-German primer* ; Paul — *Mittelhochdeutsche grammatik* ; Weinhold — *Mittelhochdeutsches Lesebuch*.

In connection with either *c* (1) or *c* (2) : Piper — *Die Sprache und Litteratur Deutschlands*.

**The French language and literature****French literature —**

The 17th century in French literature ; The classic school.

1 — The drama — Corneille, Racine, Molière.

2 — Poetry, eloquence — Lafontaine, Boileau, Bossuet, Fénelon.

3 — History, memoirs, philosophic writings — Cardinal de Retz, Duc de St Simon, Descartes, Pascal, La Bruyère.

Recommended as manual: D. Nisard — *Histoire de la littérature Française*, vols. 2 and 3.

#### Romance philology —

1 — Old French morphology and syntax, with a critical study of *La chanson de Roland*, or Villehardouin's *Conquête de Constantinople*.

2 — In Diez' *Romanische Grammatik*: Comparative grammar of French, Italian and Spanish or Provençal.

3 — Italian, Spanish or Provençal.

#### Pure mathematics

1 Higher calculus

2 Differential equations

3 Theory of equations

4 Determinants

5 Theory of forms

6 Quarternions

7 Theory of functions of complex variables

8 Elliptic functions

9 Analytic geometry of curves and surfaces

An attractive feature for students of graduate mathematics is the completeness of the Columbia library in its mathematical collection. All the recent publications, complete sets of most of the mathematical journals, and a great number of rare and valuable old works, are thus readily accessible. Among the current mathematical periodicals regularly received are the following: *Acta Mathematica*; *American journal of mathematics*; *Annali di matematica*; *Annals of mathematics*; *Archiv für Mathematik und Physik*; *Bibliotheca mathematica*; *Bulletin des sciences mathématiques*; *Bulletin, Société mathématique de France*; *Bulletino di bibliografia e di storia delle scienze matematiche e fisiche*; *Giornale di matematiche*; *Jahrbuch, Fortschritte der mathematik*; *Journal, École polytechnique*; *Journal de mathématiques pures et appliquées (Liouville)*; *Journal für reine und angewandte mathematik (Crelle)*; *Mathematische annalen*; *Mathesis*; *Messenger of mathematics*; *Nouvelles annales de mathématiques*; *Proceedings, London Mathematical Society*; *Quarterly journal of pure and applied mathematics*; *Tidsskrift for mathematik*; *Zeitschrift für mathematik und physik*.

## Applied mathematics

### DYNAMICS

- 1 Dynamics of a material particle
  - (a) Free motion
  - (b) Constrained motion
- 2 Dynamics of a connected system of material particles
- 3 Dynamics of a rigid body
- 4 Dynamics of an elastic body
  - (a) Theory of elasticity
  - (b) Hydrodynamics, including a general theory of the potential function
- 5 Acoustics

### Geology

Lectures and laboratory practice throughout the year.

### PHYSICAL GEOLOGY

Physics of the globe ; Form and cause of form ; Condition of interior, underground temperature ; Earthquakes and volcanoes ; Origin and history of mountains, valleys, plains ; Erosion by rivers, shore-waves and glaciers ; Atmosphere and oceans, composition, movements and geological functions.

### LITHOLOGY

Rock-making minerals ; Classification of rocks ; Microscopic lithology ; Origin and mode of formation of igneous, sedimentary and metamorphic rocks.

### HISTORIC GEOLOGY

Structure and history of the geological column ; Progress of plant and animal life on the globe ; Geology and evolution ; Geological chronology ; Surface geology ; Geological history of man.

### ECONOMIC GEOLOGY

Origin and classification of mineral deposits ; Characters, mode of occurrence, distribution and uses of useful minerals, coal, iron, copper, lead, gold, silver, clays, building and ornamental stones, water supply, soils, fertilizers, etc.

### TEXT-BOOKS AND BOOKS OF REFERENCE

Lyell — Principles of geology

Green — Physical geology

Dana — Manual of geology



Le Conte — Elements of geology

Nicholson — Paleontology

Dana — Manual of lithology and mineralogy

### Botany

This course is arranged for those students having a preparation equivalent to that planned for the two years' undergraduate work of the department.

#### A—PHYSIOLOGICAL

1 — Physiological anatomy.

2 — Special course in physiology, including lectures on the various theories connected with plant physiology.

3. Special laboratory work by the student on some subject, by which the methods of original research may be practically acquired.

#### B — SYSTEMATIC

1 — General review of the vegetable kingdom.

2 — Critical and comparative study of some genus, or larger group of plants.

In connection with each subject special courses of reading are planned and required.

The facilities for graduate work in botany are unequalled in any college for women in America. A small but admirably equipped botanical laboratory has been provided through the liberality of members of the Torrey Botanical Club. The Columbia botanical library is one of the largest collections of the literature of this subject, and is being rapidly augmented. The following serial publications are regularly received, and the sets of most of them are complete: Curtis' botanical magazine; Annales des Sciences Naturelles; Botanische Zeitung; Jahrbucher für wissenschaftliche Botanik; The journal of botany; Flora; Nuovo giornale botanico Italiano; Bulletin de la société imperiale des naturalistes de Moscou; Acta horti petropolitani; Botanische Jahresbericht, Magyar Novenytanilapok; The botanical gazette; Engler's Botanische Jahrbucher; Botanisches Centralblatt; Journal de botanique; Le botaniste; Revue générale de botanique; Pittonia; Annals of botany; Deutsche Botanische Monatsschrift; The gardener's chronicle; Garden; Garden and forest; Bibliotheca botanica; The transactions and proceedings of the Botanical Society of Edinburgh; Verhandlungen der k. k. Zoologisch-Botanischen

Vereins in Wien; Annales and bulletin trimestriel de la société botanique de Lyon; Proceedings and transactions of the Linnæan Society of London; Bulletin de la Société Botanique de Belgique; Revue bryologique; Bulletin de la Société Botanique de France; Hedwigia; Grevillea; The Journal of mycology; Botanisk tidsskrift; Botaniska notiser; Bulletin and memoirs of the Torrey Botanical Club; Berichte der Deutsche Botanische Gesellschaft, and others less worthy special mention.

### Zoology

The graduate course in zoology will be eminently practical, and the branches of comparative anatomy and morphology will receive especial attention.

The work of the first term, invertebrates, will be the study of paramœcium, fresh-water sponge, campanularian hydroid, starfish, earthworm, crab, grasshopper, oyster, and squid. Biological methods will be included.

During the second term the anatomy of vertebrates will be taken up, and among the forms examined will be, lancelet, lamprey, skate, perch, frog, lizard, bird, and mammal. Original research will be undertaken during the latter part of the year, and will be carefully supervised. The course will conclude with a short series of lectures upon the most recent works in zoology.

#### Text-books

Brooks — Handbook of invertebrates

Parker — Zootomy

#### Reference

Gegenbaur — Elements of comparative anatomy

McAlpine — Zoological atlas

Huxley and Martin — Practical biology

Claus and Sedgwick — Zoology

Sedgwick and Wilson — Biology

### Philosophy

Two courses, one in the history of philosophy and one in ethics, will be offered for the scholastic year 1890-91. Students desiring to pursue either course will be expected to possess an elementary knowledge of logic, psychology, ethics, and the history of philosophy, such as is given in courses 1, 2, 3 in the department of philosophy of Columbia College. Ability to read French and German will be taken for granted.

The courses are as follows :

1 *History of philosophy* — The development of English philosophy from Locke to Herbert Spencer — Locke's Essay on the human understanding, Berkeley's Essay toward a new theory of vision, and Principles of human knowledge, Hume's Treatise on human nature, Hartley's Observations on man, John Stuart Mill's Logic, Herbert Spencer's First Principles and Principles of Psychology. Lectures, essays, and private reading; two hours per week.

2 *Ethics* — A critical examination and comparison of ethical methods, with some account of the principal systems based upon them : Sidgwick's Methods of ethics, Martineau's Types of ethical theory, Green's Prolegomena to ethics, Spencer's Data of ethics, Stephen's Science of ethics, Abbott's Kant's theory of ethics, Martensen's Christian ethics, Ziegler's Geschichte der Christlichen Ethik, and Jodl's Geschichte der Ethik. Lectures, essays and private reading; two hours per week.

### Library

The library of Columbia College is open for borrowing and reference, daily, except Sundays, Good Friday, 4th of July, Thanksgiving Day, and Christmas, throughout the year, including all other holidays and vacations.

It contains over 100,000 volumes, and additions are continually made. The library of the N. Y. Academy of Science, Townsend's Civil War Record, and the library of the Huguenot Society are on deposit in the library rooms, and are accessible to readers. More than 500 different serials, including the leading periodicals, transactions of societies, etc., are regularly received.

### Laboratories

Laboratories for instruction in botany and chemistry are provided. Special students in these subjects will be admitted under the conditions already specified.

FIRST TERM		SECOND TERM	
Hours per Week		Hours per Week	
<b>FRESHMAN YEAR</b>			
3	Greek — Homer's Odyssey, three bks.; Greek prose composition;	3	Greek — Herodotus, sixth or seventh bk.; Greek prose composition
3	Greek scanning and prosody	3	Latin — Cicero, De senectute and De amicis or the Brutus; Latin prose composition; sight reading of Latin
5	Latin — Odes and Epodes of Horace; Latin prose composition;	5	Mathematics — Algebra
3	Latin syntax and prosody; sight reading of Latin	3	English — Syntax; Poets and prose writers of the present; Rhetoric and composition
2	Mathematics — Geometry	2	French or German
	English — Logical analysis; Poets of the present time; Rhetoric and composition		
	French or German		
<b>SOPHOMORE YEAR</b>			
3	Greek — Medea, Alceestis, Hippolytus, or Iphigenia in Tauris of Euripides; Greek prose composition	3	Greek — Xenophon's Memorabilia, two bks., or Thucydides, sixth and seventh bks.; Greek composition, prose and verse
3	Latin — Satire and Ars poetica of Horace; Review of Latin prosody; Sight reading	3	Latin — Agricola and Germania of Tacitus; Latin prose composition; Sight reading
3	Mathematics — Plane, analytic and spheric trigonometry	3	Mathematics — Spheric trigonometry, mensuration and surveying
1	Chemistry — Lectures and laboratory work	1	Chemistry — Lectures and laboratory work
3	English — Historic English grammar; Development of English prose; Rhetoric and composition	3	English — Historic English grammar; Development of English prose; Rhetoric and composition
2	History — European	2	History — European
	French or German		French or German

<sup>1</sup> Courses for junior and senior years not yet announced.



## REQUIREMENTS FOR GRADUATION

The right of conferring degrees in course is waived for the present, such degrees being conferred by Columbia.

## GRADUATE DEGREES

Students in the graduate department who fulfill the following conditions will be recommended for the degree of doctor of philosophy:

1 Each candidate shall pursue, for the term of at least two academic years, a course of higher study, in the graduate department and under the direction of the faculty, in three or more cognate departments of study, and shall pass an approved examination thereon.

Before coming up for examination, the candidate must produce certificates from the heads of the departments in which she has pursued her graduate studies, that she has been regular in attendance and faithful in the work assigned.

2 She shall also present an acceptable thesis or dissertation, embodying the results of special study, research, or observation, upon a subject previously approved by the officers of instruction with whom she has studied.

Candidates for the degree of doctor of science or doctor of letters will be held to the same conditions as those above noted for doctor of philosophy.

Students in the graduate department who fulfill the following conditions will be recommended for the degree of master of arts:

Each candidate shall pursue for the term of at least one academic year, a course of higher study in the graduate department and under the direction of the faculty, in three or more cognate departments of study, and shall pass an approved examination thereon.

Before coming up for examination, the candidate must produce certificates from the heads of departments in which she has pursued her graduate studies, that she has been regular in attendance and faithful in the work assigned.

## BUILDINGS

Main building, five story brick and stone, floor area 7,875 sq. ft., one class room, 14 seats, rented for \$3,250 per year, estimated to be worth about \$32,500. Botanical laboratory, floor area 1,325 sq. ft., one class room, 12 seats. Chemical laboratory, one class room, six desks.

## ADDITIONAL INFORMATION

First entrance examinations were held at Columbia College, June 3-8, 1889.

Chemical laboratory remained open for summer work in 1890, being closed only for the month of September.

The junior and senior courses of study are not yet diminished.

## ST LAWRENCE UNIVERSITY

*Canton*

CONSISTING OF

College of Letters and Science      Canton Theological School

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

3 Ap 1856 Legislature incorporated St Lawrence University and Theological Seminary. Theological department and property to be kept separate from the college. Under control of Universalist denomination.

Ap 1858 College and Theological School opened. The latter the first school of theology established by Universalists.

1864 Preparatory school which it had been found desirable to open, discontinued.

1869 Law school begun. Given up after graduating two classes under effect of new rules of the court of appeals which curtailed its privileges.

## TRUSTEES

## Elected

1867	President, Hon. Edwin Atkins Merritt, LL. D..	Potsdam
1872	Treasurer, George Robinson .....	Canton
1886	<sup>1</sup> Secretary, Nelson Lemuel Robinson, M. A....	"
1856	Rev. George Washington Montgomery, D. D..	Rochester
1867	Rev. John Stebbins Lee, D. D .....	Canton
1874	Hon. Allen Eugene Kilby, LL. B., M. A.....	Carthage
1877	David William Baldwin.....	Watertown
1879	Rev. Isaac Morgan Atwood, D. D.....	Canton
1879	Hon. Charles Hazen Russell.....	Brooklyn
1881	Lyman Bickford.....	Macedon
1881	Rev. Asa Saxe, D. D.....	Rochester
1882	Hon. Vasco Pickett Abbott, LL. B., M. A....	Gouverneur
1883	Hon. Charles Rufus Skinner.....	Albany
1883	Foster L. Backus, LL. B., M. A.....	Brooklyn
1884	Ledyard Park Hale, LL. B., M. S.....	Canton
1885	Hon. John Card Graves, M. A .....	Buffalo
1887	Hon. A. Barton Hepburn.....	Canton
1888	Rev. Alpheus Baker Hervey, Ph. D.....	"
1888	Rev. Richmond Fisk, D. D.....	Watertown
1888	Col. Halbert Stevens Greenleaf .....	Rochester

## APPOINTED DURING YEAR

1889	Rev. Daniel Ballou .....	Utica
1889	Linus Spalding Freeman.....	Middleport
1889	Hon. Daniel Magone.....	Ogdensburg

## VACANCIES

Horatio Robinson, M. D., Auburn, died 1889

Rev. Almon Gunnison, D. D., Brooklyn, resigned 10 Je '90

## COLLEGE OF LETTERS AND SCIENCE

*Canton*

For historic sketch and trustees see foregoing.

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<sup>1</sup>Not a trustee.

## ADMINISTRATION

Figures in column at left give first year of service in St Lawrence.

1888 President, Rev. Alpheus Baker Hervey, M. A., Ph. D.

M. A. St Lawrence University 1878, Tufts 1881; Ph. D. St Lawrence 1885; Member and Fellow American Association for the Advancement of Science; Author Sea mosses, 1882, Beautiful wild flowers, 1882, Flowers of the field and forest, 1883, Translated The microscope in botany, 1885, Manual of vegetable histology, 1887.

1883 Dean, Henry Priest, M. A.

B. A. Tufts College 1874, M. A. 1877; Principal Goddard Seminary, Barre, Vt. nine years.

1872 Treasurer, George Robinson.

1876 Secretary and librarian, Charles Kelsey Gaines, M. A., 15 Pine st.

B. A. St Lawrence University 1876, M. A. 1879; Member American Philological Society.

Assistant Librarian, H. P. Forbes, D. D.

## INSTRUCTION

Figures in column at left give first year of service in St Lawrence and years spent in teaching.

1888 Rev. Alpheus Baker Hervey, Ph. D. President and Cummings Professor of Natural Science.

See also "Administration."

1872 Rev. Absalom Graves Gaines, D. D., S. T. D. Craig Professor of Intellectual and Moral Philosophy and Political Economy.

S. T. D. Tufts College; President St Lawrence University 1873-88.

1871 Rev. James Henry Chapin, M. A., Ph. D. Professor of Geology and Mineralogy.

B. A. Lombard University, Galesburg, Ill. 1857, M. A. 1860, Ph. D. 1875; Member American Association for the Advancement of Science; Fellow American Society of Geology; Author The creation and early development of society, From Japan to Granada.



1876 Charles Kelsey Gaines, M. A. Professor of the Greek  
14 Language and Literature, and Instructor in English  
Literature.

See also "Administration."

1882 Henri Hermann Liotard, M. A. Professor of the German  
22 and French Languages.

B. A. Academy of Geneva 1850, M. A. 1853.

1883 Henry Priest, M. A. Hayward Professor of Mathematics  
and Physics.

See also "Administration."

1885 Clement Morelle Baker, M. A. Professor of the Latin Lan-  
5 guage and Literature, Miner st.

B. A. St Lawrence University 1885, M. A. 1888.

VACANCIES

Robert Dale Ford, M. S. (St Lawrence) Instructor in  
mathematics. Resigned.

HONORARY DEGREES

B. S.—Mark Manley

D. D.—Moses Henry Harris, M. A ..... Chicago  
George Landor Perin ..... Tokio, Japan

COLLEGE APPOINTMENTS

(None)

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
First Russell prize in composition and oratory, Benjamin Ames Sawyer, Canton .....	\$15
Second Russell prize in composition and oratory, Lucy Evelyn Wight, Brooklyn.....	10
Third Russell prize in composition and oratory, Edwin Wade Sanford, Nicholville.....	5
First Russell prize in oratory, May Natalie Green, Brooklyn	20
Second " " " Bridget Mahoney, Canton....	10
First prize in parliamentary law and practice, Eugene Merritt Crandall, Pierrepont .....	10

	Value
Second prize in parliamentary law and practice, Ceylon Samuel Kingston, Potsdam .....	\$3
Special prize in mathematics, Nettie Idella Robertson, Colton .....	3
Colton scholarship, Walter Edwin Andrews, Pierrepont .....	45
Townsend " William Joseph Bower, Waddington....	45
Merritt " Frank Lovern Bryant, Columbus .....	45
Madrid " James Henry Christie, Madrid .....	45
Townsend " Charles Fred Cook, Elbridge .....	45
Newcomb " Eugene Merritt Crandall, West Pierrepont	45
Ogdensburg " Thomas Alfred Davies, Ogdensburg .....	45
Colton " Richard James Donovan, Colton .....	45
Lawrenceville scholarship, John Henry Dullea, Lawrenceville	45
Morley " Schuyler Colfax Hodge, Morley .....	45
Waddington " George Allison Logan, Waddington ..	45
Newcomb " Silas Alpha Lottridge, Columbus ....	45
Waddington " James Henry Martin, Waddington ..	45
University " Emmet Jeremiah Murphy, Hermon ..	45
Canton " George Murray, Canton .....	45
University " Ellis Freeman Dodge, Norfolk .....	45
Canton " William Rafferty, jr., West Pierrepont	45
Heuvelton " Robert Samuel Roulston, Heuvelton	45
Waddington " John William Rutherford, Waddington	45
Lawrenceville " Edwin Wade Sanford, Nicholville ....	45
Canton " Benjamin Ames Sawyer, Canton .....	45
Heuvelton " Everett Austin Thornton, Heuvelton	45
University " Fred Birney Van Ornum, Canton ....	45
Richmond Fisk " Lyman Chester Ward, Watertown ...	45
Waddington " Roy Herbert Wilson, Waddington ...	45
Morley " Silas Wayne Wright, Morley .....	45
Newcomb " Ella May Adams, Whitney's Point ...	45
Canton " Nellie Leona Baker, Canton .....	45
Colton " Rose May Libby, Colton .....	45
Canton " Bridget Mahoney, Canton .....	45
Colton " Nettie Idella Robertson, Colton .....	45
Canton " Jessie Verena Stiles, Hermon .....	45
Madrid " Anna Louisa West, Madrid .....	45
Russell " Maud Amelia Wrigglesworth, Russell	45

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

There are three courses of study,—the classical, the philosophical and the scientific.

In the philosophical course French may be elected instead of German for three years, in which case German must be taken in the junior year to the extent below indicated for French.

Of the three languages, Latin, French and German, offered in the scientific course, the student is required to elect *two* (Latin is strongly recommended), and each of the languages so elected must be pursued three years; except that a student who has pursued French two years may elect German for the third year, and *vice versa*.

## FRESHMAN YEAR

CLASSICAL COURSE		PHILOSOPHICAL COURSE		SCIENTIFIC COURSE	
Hours per Week		Hours per Week		Hours per Week	
FIRST TERM					
5	Latin—Livy; Prose composition; Roman history	4	Latin—Livy; Prose composition	4	Latin—Collar and Daniel's Beginners Latin book
5	Greek—Lysias, selections; Prose composition; Greek history	4	German—Collar's Eysenbach	4	French—Keutel's Grammar, with exercises
5	Algebra—Olney's	5	Algebra—Olney's	5	Grammar—Collar's Eysenbach
2	Rhetoric, declamations, themes	3	History—Ancient, especially Greek and Roman	2	Algebra—Olney's
		2	Rhetoric, declamations, themes	3	History, as in philosophical course
				2	English, as in classical course
SECOND TERM					
4	Latin—Cicero's De senectute; Horace's Odes, with meters; Prose composition	4	Latin, as in classical course	4	Latin—Beginner's Latin book; Caesar's Gallic war
2	History of Rome	4	German—Grammar with exercises	4	French—Grammar; Standard prose
5	Greek—Xenophon's Memorabilia, selections; Plato's apology; Prose composition; Greek history	5	Geometry—Olney's	4	German—Grammar, with exercises
5	Geometry—Olney's	4	History—Medieval and modern	5	Geometry—Olney's
1	English—Exercises in composition, declamations, themes	1	English, as in classical course	4	History, as in philosophical course
				1	English, as in classical course



## SOPHOMORE YEAR

CLASSICAL COURSE			PHILOSOPHICAL COURSE			SCIENTIFIC COURSE		
Hours per week		Hours per week			Hours per week			Hours per week
			FIRST TERM					
4	Latin — Horace's Satires and epistles; History of Roman empire	4	Latin — Horace's Satires and epistles; German — German reader and ballads; Prose composition	4	Latin — Cicero's Orations; Prose composition			
5	Greek — Tragedy; Greek history and literature	4	Mathematics, as in classical course	4	French — Racine's Athalie; Corneille's Le Cid; Prose composition			
5	Mathematics — Conic sections; Trigonometry, plane and sphere, with navigation; Surveying, field practice and mensuration, with use of instruments	5	Civil government, Parliamentary law, as in classical course	4	German, as in philosophical course			
3	Civil government — Andrews's Manual	1	Declamations, essays	5	Mathematics, as in classical course			
1	Parliamentary law — Instruction and practice			4	Civil government, Parliamentary law, as in classical course			
	Declamations, essays				Declamations, essays			
			SECOND TERM					
3	Latin — Plautus' Captive; Tactus' Agricola and Germania, selections	3	Latin, as in classical course	4	Latin, as in first term			
4	Greek — Demosthenes De corona, with the history of the period	3	German — Schiller's Wilhelm Tell; Lessing's Emilia Galotti; Prose composition	3	French — Molière's Le misanthrope; Modern novelists; Prose composition			
3	Mathematics (elective) — Analytic and descriptive geometry	3	Mathematics, as in classical course	3	German, as in philosophical course			
3	Zoology (elective) — Orton's, with special zoological work	4	Zoology, as in classical course	3	Mathematics, as in classical course			
4	Human physiology — Class room work, with demonstrations and laboratory exercises	3	Physiology, as in classical course	3	Physiology, as in classical course			
3	Botany — With collection and analysis of specimens, and use of microscope	4	Botany, as in classical course	3	Botany, as in classical course			
1	Parliamentary practice and debate — With advice and criticism	1	Parliamentary practice and debate, as in classical course	3	Parliamentary practice and debate, as in classical course			
	Declamations, essays		Declamations, essays	1	Declamations, essays			
	[Zoology is an alternative with the mathematics of this term]							

## JUNIOR YEAR

CLASSICAL COURSE		PHILOSOPHICAL COURSE		SCIENTIFIC COURSE	
Hours per Week		Hours per Week		Hours per Week	
FIRST TERM					
1	Latin (elective) — Juvenal; Cruttwell's Roman literature	2	Latin (elective), as in classical course	4	Latin — Virgil. — <i>Æneid</i>
1	Greek (elective) — Greek dialects; <i>Odyssey</i> or <i>Herodotus</i>	2	German (elective) — Lessing's <i>Nathan der Weise</i> ; Prose composition	2	French — <i>Chefs-d'œuvre des classiques Française</i>
4	French — Keetel's Grammar, with exercises	4	French — Keetel's grammar, with exercises	2	German, as in philosophical course
3	Mathematics (optional) — Calculus	3	Mathematics (optional) — Calculus	3	Mathematics (optional) — Calculus
3	Physics — Mechanics	3	Physics — Mechanics	3	Physics — Mechanics
5	Chemistry — With laboratory practice under the supervision of the instructor	5	Chemistry, as in classical course	5	Chemistry, as in classical course
4	Geology — With mineralogy, and the study of specimens	4	Geology, as in classical course	4	Geology — With mineralogy and the study of specimens
	Orations, essays		Orations, essays		Orations, essays
	[German may be elected instead of Latin and Greek, throughout the year]		[Latin is an alternative with German throughout the year]		
SECOND TERM					
1	Latin (elective) — Terence; Cruttwell's Roman literature	2	Latin (elective) — Terence; Cruttwell's Roman literature	4	Latin — Cicero de Senectute; Odes of Horace, with meters
1	Greek (elective) — Greek meters; Greek comedy, or Greek lyrics	2	German (elective) — History and literature; conversation	2	French — History and literature; Conversation
4	French — Keetel's Grammar completed; Standard prose	4	French — Keetel's Grammar completed; Standard prose	2	German — History and literature; Conversation
5	Physics — Acoustics, optics, electricity, heat, etc.	5	Physics — Acoustics, optics, electricity, heat, etc.	5	Physics — Acoustics, optics, electricity, heat, etc.
4	Philosophy — Psychology and metaphysics, with lectures	4	Philosophy — Psychology and metaphysics, with lectures	4	Philosophy — Psychology and metaphysics, with lectures
3	History — The English people	3	History — The English people	3	History — The English people
	Orations, essays		Orations, essays		Orations, essays

SENIOR YEAR				
CLASSICAL COURSE	PHILOSOPHICAL COURSE	SCIENTIFIC COURSE	Hours per Week	Hours per Week
3 Logic — Deductive—Jevons 2 Ethics — Theoretical and practical. with lectures and theses 3 Rhetoric — Whately's Elements 3 Political economy — Production and consumption of wealth, with lectures, reviews and theses 3 Astronomy — Young's 3 English literature — Historical and critical, with lectures, an extensive course of reading, and numerous written exercises Orations, essays, theses	FIRST TERM Same as in classical course	Same as in classical course	Same as in classical course	
3 Logic — Inductive—Fowler, with lectures on probability 3 Political economy — Distribution, money and exchange, with lectures and discussions, reviews and theses 3 Evidences of religion — Natural and revealed; the relations of religion, science and philosophy, with lectures and reviews 2 Rhetoric — Whately's Elements reviewed, and lectures 3 International law (elective) — Woolsey; Hall 3 English and American literature. — With course of reading, lectures, written exercises and criticism Orations, essays, theses [Extra work in English literature, in Greek, or in Latin, may be elected instead of international law]	SECOND TERM Same as in classical course	Same as in classical course	[Extra work in English literature may be elected instead of international law]	

## REQUIREMENTS FOR GRADUATION

Graduates in the classical course receive the degree of bachelor of arts.

Graduates in the philosophical course receive the degree of bachelor of philosophy.

Graduates in the scientific course receive the degree of bachelor of science.

Bachelors of arts of three years' standing may take the degree of master of arts, bachelors of philosophy of three years' standing may take the degree of master of philosophy, and bachelors of science of three years' standing may take the degree of master of science, on passing an examination on some literary or scientific course of study to the satisfaction of the faculty.

Candidates are expected to present dissertations on topics in the fields of study which they have specially investigated.

Resident graduates who have completed an adequate course of study may be admitted to an examination for a second degree before the expiration of three years, if the faculty deem it advisable.

Masters of arts, masters of philosophy, and masters of science of this college may be examined for the degrees of doctor of philosophy and doctor of science ; but such degrees will be conferred only after satisfactory proof of the faithful and successful prosecution of courses of study fully equal in extent and quality to those required for similar honors in the best universities.

## BUILDINGS

Main building, four story brick, built 1856, floor area 20,000 sq. ft., six class rooms, 120 seats, value about \$40,000; chapel included in main building, floor area 1,250 sq. ft., 120 seats. Class room building, Fisher Hall, two story Canton marble, built 1882, floor area about 5,820 sq. ft., five class rooms, 100 seats, value \$20,000. Library, Herring Hall, two story Potsdam sandstone, built 1870, floor area about 2,500 sq. ft., value \$15,000. President's house, two story brick, built 1887, floor area about 3,800 sq. ft., value \$5,000. Science rooms, laboratory, gymnasium, included in main building. Museum rooms in main building and Herring Hall.



1857 President, Hon. Benj. F. Langworthy . . . .	Alfred
1857 Vice-President, Rev. Darwin E. Maxson, D. D. . . . .	“
1881 Treasurer, William H. Crandall . . . . .	“
1887 Recording Sec’y, Alpheus B. Kenyon, M. S.	“
1857 Corresponding Sec’y, Rev. Jonathan Allen, D. D., LL. D., Ph. D. . . . .	“
1837 Maxson Stillman . . . . .	“
1847 Samuel N. Stillman . . . . .	“

## Elected

1848	Albert Smith.....	Alfred
1857	William C. Burdick.....	"
1857	Ira B. Crandall.....	"
1857	Rev. Darius R. Ford, D. D.....	Elmira
1857	Maxson J. Green.....	Alfred
1857	Henry P. Saunders, M. D.....	"
1857	William M. Saunders.....	"
1864	Almond E. Crandall.....	"
1865	Silas C. Burdick.....	"
1865	Lorenzo D. Collins.....	"
1865	Rowland R. Thomas.....	"
1874	Amos R. Allen.....	"
1881	George H. Babcock.....	Plainfield, N. J.
1881	Amos R. Shaw.....	Alfred
1883	Edwin S. Bliss.....	"
1883	Rev. Lewis A. Platts, D. D.....	"
1884	Rev. Leander E. Livermore, M. A.....	New Market, N. J.
1885	Hon. Seymour Dexter, Ph. D.....	Elmira
1885	Daniel Lewis, Ph. D., M. D.....	New York
1888	Peter B. McLennan, Ph. D.....	Syracuse
1888	Charles Potter.....	Plainfield, N. J.
1889	Hon. Albert B. Cottrell.....	Richburg
1889	William R. Prentice, M. A.....	Hornellsville

## APPOINTED DURING YEAR

1890	Henry C. Coon, M. A., M. D.....	Alfred
1890	Hon. N. Mead Hubbard, Ph. D.....	Cedar Rapids, Ia.
1890	Orville M. Rogers.....	Alfred

## VACANCIES

Clark Rogers, Alfred, died 13 Ag '89

Hon. W. W. Brown, LL.D., Bradford, Pa., term expired 24 Je

Chas. A. Burdick, M. A., Farina, Ill., term expired 24 Je

## COLLEGIATE DEPARTMENT

*Alfred Center*

For historic sketch and trustees see foregoing.

## ADMINISTRATION

Figures in column at left give first year of service in Alfred.

1844 President, Rev. Jonathan Allen, D. D., Ph. D., LL. D.

Educated at Alfred, Oberlin and Harvard.

1881 Treasurer, William H. Crandall.

1885 Registrar and Secretary, D. A. Blakeslee, M. A.

Educated at Alfred.

Preceptress, Mrs L. T. Stanton.

Librarian, E. M. Tomlinson.

Assistant Librarian, Eva St Clair Champlin.

## INSTRUCTION

Figures in column at left give first year of service in Alfred and years spent in teaching.

1844 J. Allen, D. D., LL. D., Ph. D. Metaphysics and Literature.

46 Educated at Alfred, Oberlin and Harvard.

1846 A. A. Allen, M. A. Art.

44 Educated at Alfred, Cooper Union and Ingham.

1849 D. E. Maxson, D. D. Pastoral Theology.

30 Educated at Alfred, Brown and Union Theological Seminary.

1854 I. F. Kenyon, M. A. Modern Languages.

36 Educated at Alfred and Germany.

1866 Thos. R. Williams, D. D., Ph. D. Biblical Theology.

34 Educated at Alfred, Brown and Union Theological Seminary.

1867 A. H. Lewis, D. D. Church History.

23 Educated at Alfred and Union Theological Seminary.

1867 E. M. Tomlinson, M. A. Greek.

20 Educated at Berlin and Leipzig.

1870 A. E. Stillman, M. A. Art.

20 Educated at Alfred.

1871 H. M. Crandall, Music.

19 Educated at Alfred and Boston Conservatory of Music.

1872 H. C. Coon, M. A., M. D. Chemistry and Physics.

25 Educated at Alfred and Cornell.

1874 A. B. Kenyon, M. S. Mathematics.

25 Educated at Alfred and Cornell.

1884 D. A. Blakeslee, M. A. Normal.

16 Educated at Alfred.

1884 I. R. Maxson, M. A. Associate Normal.

15 Educated at Alfred.

1884 Wardner Williams, Ph. D., M. M. Music.

6 Educated at Alfred and Boston Conservatory of Music.

1886 F. S. Place, B. D., M. A. Mechanics and Astronomy.

4 Educated at Alfred.

1888 C. M. Post, M. A. Natural History.

2 Educated at Rush Medical College, Chicago.

1888 L. C. Rogers, M. A. History and Civics.

5 Educated at Alfred, Williams and Rutgers.

1889 C. E. Benton, Book-keeping and Penmanship.

2 Educated at Alfred.

1890 Edwin H. Lewis, M. A.

3 Educated at Alfred.

Preceptress, Mrs L. T. Stanton.

Estelle W. Hoffman, Ph. B. Associate in the normal and preparatory departments.

Mrs Eleanor Ellsworth. Instructor in Water Colors and China Painting.

#### VACANCIES

David I. Green, M. A., Alfred. Resigned 26 Je.

#### HONORARY DEGREES

LL. D.—Prof. John Fryer . . . . . Shanghai, China

#### COLLEGE APPOINTMENTS, ETC.

No college appointments, prizes, scholarships, fellowships or requirements for admission reported.



## COURSES OF STUDY

## MATHEMATICS

1 Elements of algebra through quadratic equations, and plane geometry.

2 Algebra completed, solid geometry, and plane and spheric trigonometry.

3 Analytic geometry, differential calculus, integral calculus, surveying and conic sections.

Aside from the work in the text-books, numerous theorems, problems, and examples are assigned, of a nature intended to acquaint the student with the practical uses of each study, and to induce original thinking.

In surveying, each subject is illustrated and applied by actual practice in the field, with the appropriate instruments.

## LATIN

1 Elements of Latin and Cæsar, prose composition, Cicero's Orations, Virgil's Eclogues and two books of the *Æneid*.

2 Virgil's *Æneid*, books 3-6, *Georgics*, selections from Livy, Tacitus, Horace, Ovid, Terence, Pliny or other authors; each one term.

In class 1 it is aimed to develop a thorough mastery of Latin syntax and the prosody of hexameter verse. Ability to read Latin at sight, in the order that it is written, is the object constantly held in view, and for this purpose daily exercises are taken in reading without translation and in translating passages given orally.

In class 2 more attention is given to archeology, mythology and the literary qualities of the passages read.

The Roman method of pronunciation is used.

## GREEK

This is divided into two classes, the first requiring two years' study, the second one year.

1—White's first lessons in Greek and Goodwin's Greek grammar are used in giving instruction in the elements of the language. Students in this class read three books of Xenophon's *Anabasis* and three books of Homer's *Iliad*. Frequent exercises in Greek composition are required.

2—The authors usually read are Sophocles, Plato and Demosthenes, though other authors are sometimes substituted. Portions of the Greek Testament are also read in connection with the above authors.

The chief objects of the course of instruction are to secure, on the part of the student, a critical knowledge of the language, readiness in translating into idiomatic English, a proper appreciation of the style and spirit of the authors read, and an acquaintance with some of the prominent features of the life and civilization of the Greeks.

#### GERMAN

1 Oral method, Stern's Studien und Plaudereien, one term; Collar—Eysenbach's German lessons, with some easy reading, two terms.

2 Schiller: Wilhelm Tell, Jungfrau von Orleans; Goethe: Hermann und Dorothea, Faust; Lessing: Minna von Barnhelm; or other authors; each one term.

Written exercises and conversation in German are continued throughout.

#### FRENCH

1 Chardenal's first and second French course, two terms.

2 Souvestre, Philosophe sous les toits; Victor Hugo, Quatre-vingt-treize; Michelet's La Mer; or other authors; each one term.

Chardenal's French exercises for advanced classes are taken in connection with the reading of class 2.

Conversation in French is pursued throughout the course.

#### PHYSICS

1—Physical geography, mechanics and molecular physics, three terms.

2—Advanced study in meteorology, mechanics and molecular physics.

Laboratory work is required in each class to illustrate the principles and familiarize the student with the use of the apparatus. Additions are made to the apparatus as fast as funds accrue from the Babcock endowment for that purpose.

#### CHEMISTRY

1 Inorganic chemistry, two terms.

2 Organic chemistry, one term; Qualitative analysis and toxicology, one term; Blow-pipe analysis and determinative mineral-

ogy, two terms; Quantitative analysis and its relations to special work as medical, physiological or agricultural chemistry, two or more terms.

One hour's practice is required each day in inorganic and organic chemistry, and two hours in each of the others.

#### NATURAL HISTORY

1 Elementary physiology and hygiene, one term.

2 Physiology, human body, advanced course, Martin, illustrated with the skeleton, manikin and histological microscopic specimens; Zoology, Comparative zoology, Orton, illustrated with specimens from the museum; Geology, new text-book of geology, Dana, illustrated with specimens and including field work; Botany, elements of botany, Bessey, and Class book of botany, Wood, illustrated with microscopic specimens and including the preparation of an herbarium of at least 100 species of plants; each subject, two terms.

3 Plant biology, text-books, Elements of botany, Bessey, and Plant dissection, Arthur, Barnes and Coulter; Animal biology, text-books, Anatomical technology, Wilder and Gage, and Practical biology, Huxley and Martin.

In the biological work, however, the student is not restricted to the work above mentioned, but will be allowed ample opportunity to study further along these lines if he so desires. Students in biology will have the use of first-class microscopes and standard books for reference.

#### HISTORY

1 United States history, two terms.

2 (a) History of Greece and history of Rome; two terms.

(b) History of England, history of France and history of the state of New York, three terms.

(c) General history, two terms.

#### POLITICAL SCIENCE

1 Civil government, political economy, two terms.

2 Political and constitutional history of the United States, international law, two terms.

3 (a) Constitutional history of England, and social science.

(b) Constitutional law, and Roman law; studies in this class will be varied to meet the wants of students.

Instruction is given by lectures in addition to text-books.



## ENGLISH AND LITERATURE

1 Elementary rhetoric, two terms.

2 Advanced rhetoric and studies in literature, ancient and modern.

Elocution, elementary and advanced.

## PHILOSOPHY

Logic, psychology, metaphysics, esthetics, ethics, history and philosophy of civilization, and comparative theology and religion.

These studies and class 2 of English are taken during the senior year. The work is pursued largely by library investigation and presentation of the results in daily dissertations; two or three hours recitation daily for one year.

## INDUSTRIAL MECHANICS

1 Elements of mechanical drawing, projections, three terms.

2 (a) Mechanical engineering: Perspective, lettering, machine drawing, descriptive geometry, analytic mechanics, steam engine and other motors, hydraulics, 10 terms.

(b) Civil engineering: Perspective, lettering, bridge and roof drawing, pen and colored topography, plotting of railroad and farm surveys, astronomy, descriptive geometry, analytic mechanics, resistance of materials, civil engineering, bridge-building, Henck's field book with field practice, geodesy, 12 terms.

(c) Architecture: Perspective, architectural drawing, history of architecture, designing, descriptive geometry, graphics, resistance of materials, nine terms.

(d) Manual: Elementary carpentry, elementary wood turning, two terms.

(e) Decorative: Elementary decorative design, two terms.

## FINE ARTS

1 Form study and drawing.

2 Art lectures, one hour each week for five terms; Greek, early Italian, high Renaissance and American art, and on the theory and practice of art.

Studies are pursued in Lubke, Kugler, Ruskin, Radcliffe, Grimm, Fergusson and various other writers upon art history and criticism. Special instruction and practice in oil, mineral and water colors; clay modeling; drawing from nature, the antique, and the human figure, in charcoal, crayon or pencil.



## MUSIC

1 First term—Notation, sight-reading and chorus practice. Second term—Glees, part songs, oratorio and concert selections, with notes on composers and music.

2 *Voice culture*—Includes voice development solfeggii, vocalizes, solo and concert singing in English, German and Italian.

*Cabinet organ*—One year. The mastery of a good organ method, with selections given at the discretion of the teacher.

*Pipe organ*—This is intended for a practical organ course, fitting the student for either a teacher, church or concert organist. The course is founded on accepted studies and selections of the best organ composers.

*Pianoforte*—This course is founded on the most approved method of pianoforte playing. It includes the *etudes* and *technique* of the best authors, together with selections from the works of Bach, Handel, Beethoven, Mendelssohn, Schumann, Schubert, Liszt, Chopin, Rubinstein and others.

*Harmony*—One year. Includes intervals, scales, chords, modulations, suspensions, part writing, etc.

*Theory*—One year. Embraces the theory of music, analysis of composition, musical form, etc.

*History of music*—One year. Includes biographical sketches of the great musicians.

*Orchestra*—Band and orchestral instruments. Students prepared may play in the university band or orchestra and also obtain instruction in the use of band and orchestral instruments.

## NORMAL

The normal work includes both a thorough knowledge of the subject matter and training in the methods of teaching it to children. Special attention is given to primary work. The word-script or combined method for teaching reading, Grube method in arithmetic, language lessons, freehand drawing, sand and clay modeling in geography, music and calisthenics are taken up.

Teachers' classes, under the State department, are held during the fall and winter terms, and students in them, successfully completing the work and passing the uniform examinations, receive their tuition free. These classes, in addition to the work named above, take up school economy, mind studies, history of education, school law and methods in physiology.

The topics in these classes constitute, in the main, the same work as that covered by the uniform examination for the second

grade teachers' certificate, and passing this examination entitles one to the credit of having passed the class, and also to a second grade license to teach.

## REQUIREMENTS FOR GRADUATION

For either bachelor's degree 55 terms' work is required above the regents' preliminary academic certificate. The special requirements are as follows :

### FOR THE DEGREE OF BACHELOR OF ARTS

Classes 1 and 2 in mathematics ; nine terms from class 1 and three from class 2 in Latin ; classes 1 and 2 in Greek ; class 1 in natural history ; class 1 and class 2 (*a*) in history ; civil government ; class 1 in English, and six terms in the senior course in English and philosophy. The remaining 14 terms are elective.

### FOR THE DEGREE OF BACHELOR OF SCIENCE

Classes 1 and 2 and three terms in class 3 in mathematics ; eight terms in any two of the following languages : Latin, Greek, German, French ; class 1 in physics ; class 1 and one term from class 2 in chemistry ; classes 1 and 2 in natural history ; class 1 in history ; civil government ; class 1 in English, and six terms in the senior course in English and philosophy. The remaining 12 terms are elective.

### FOR THE DEGREE OF BACHELOR OF PHILOSOPHY

Nine terms in any one or two of the following languages : Latin, Greek, German, French ; classes 1 in mathematics, physics, natural history, history and political science ; botany ; class 1 in English and the senior course in English and philosophy. The remaining 22 terms are elective.

### FOR THE DEGREE OF BACHELOR OF LITERATURE

Class 1 in mathematics ; 15 terms in any two or three of the following languages : Latin, Greek, German, French ; class 1 in natural history ; class 1 and four terms from class 2 in history ; classes 1 and 2 in political science ; class 1 in English and the senior course in English and philosophy. The remaining 15 terms are elective.

### FOR THE DEGREE OF BACHELOR OF EDUCATION

Teachers' class ; classes 1 and 2 in mathematics ; eight terms in any one or two of the following languages : Latin, Greek, French, German ; classes 1 in physics, natural history, history and political

science; class 1 in English, and six terms in the senior course in English and philosophy. The remaining 23 terms are elective. Instead of elective studies in this course one term's work may be credited for each term of teaching, but not to exceed nine terms.

#### FOR THE DEGREE OF BACHELOR OF INDUSTRIAL MECHANICS

Classes 1 and 2 and four terms from class 3 in mathematics; classes 1 in German, French, physics, chemistry, natural history, history, English and art; civil government; class 1 and class 2, *a* or *c*, in industrial mechanics. The remaining 16 or 17 terms are elective.

#### FOR THE DEGREE OF BACHELOR OF CIVIL ENGINEERING

Classes 1 and 2 and four terms from class 3 in mathematics; classes 1 in German, French, physics, natural history, history, English and art; class 1 and two terms from class 2 in chemistry; geology; civil government; class 1 and class 2 *b* in industrial mechanics. The remaining 10 terms are elective.

#### FOR THE DEGREE OF BACHELOR OF FINE ARTS

Classes 1 in mathematics, physics, natural history, history and political science; five terms in modern language; botany; class 1 in English and four terms from the senior course in English and philosophy; 25 terms in the theory and practice of art. The remaining six terms are elective.

#### FOR THE DEGREE OF BACHELOR OF MUSIC\*

Classes 1 in mathematics, physics, natural history, history and political science; six terms in modern language; class 1 in English and four terms from the senior course in English and philosophy, 25 terms in the theory and practice of music. The remaining seven terms are elective.

The master's degree is conferred on those who have obtained the corresponding bachelor's degree and completed nine terms of additional work, approved by the faculty.

### BUILDINGS

Main building, four story brick and stone, built 1858, total floor area 28,960 sq. ft., value \$25,000; dormitories, in main building. Science room, art room, library, laboratory and museum in one building, three story brick and stone, built 1884, floor area



9,600 sq. ft., five class rooms, 250 seats, value \$30,000. Chapel two story wood, built 1853, floor area 15,000 sq. ft., six rooms, 450 seats, value \$20,000. Class room building, one and a half story wood, built 1851, floor area 1,850 sq. ft., four rooms, 150 seats, value \$4,000. Observatory, one story wood, built 1860, floor area 1,000 sq. ft., four rooms, value \$1,000.

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## CORNELL UNIVERSITY

### *Ithaca*

In the official report of Cornell the information is given for the university as a whole. This volume therefore makes no division, except that all facts which clearly relate to the law school are given separately.

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month      Year

2 JI 1862 Congress passed an act donating public land to states and territories in order to provide land for instruction in agriculture and the mechanical arts. New York's share was 990,000 acres valued at \$1,237,500.

27 Ap 1865 Legislature incorporated Cornell University. In addition to the above fund, Mr. Cornell gave \$500,000 on condition that it should not be divided. As a condition of the grant, Cornell was required to receive free of tuition, one student annually from each assembly district of the state to be selected on competitive examination in manner specified. At no time should a majority of the board of trustees be of any one religious sect or of no religious sect.

21 O 1866 Hon. Andrew D. White, chairman of committee on organization presented a report in accordance with which a class of non-resident professors was to be appointed, wide range of elective studies was to be provided, and especial opportunities offered for instruction in agriculture, industrial mechanics and the various applied sciences. No preference was to be given to any department of study.



Month Year

- 7 O 1868 University opened with 19 resident and six non-resident professors. Eight other professorships were named in the first announcement which were to be filled at an early date. Hon. Andrew D. White was the first president.
- Ap 1872 By an act of the trustees, women were admitted on the same terms as men, except that they must be at least 17 years of age.
- S 1874 Sage college for women completed and ready for students.
- 12 My 1882 Legislature amended charter by removing limitation upon amount of property that may be held by the university.
- 16 Je 1886 Law department established.
- 23 S 1887 Law department opened.

## TRUSTEES

Elected

- 1887 Chairman, Hon. Henry W. Sage..... Ithaca  
<sup>1</sup> Secretary, William R. Humphrey..... “  
 Hon. Alonzo B. Cornell..... New York  
 President of the University, ex-officio  
 His Excellency the Governor of New York, ex-officio  
 His Honor the Lieutenant-Governor, ex-officio  
 Speaker of the Assembly, ex-officio  
 Superintendent of Public Instruction, ex-officio  
 President of the State Agricultural Society, ex-officio  
 Librarian of the Cornell Library, ex-officio
- 1886 Mynderse Van Cleef, B. S..... Ithaca.  
 1886 George R. Williams, LL. B ..... “  
 1887 Hon. Douglas Boardman, M. A. .... “  
 1887 David S. Jordan, LL. D ..... Bloomington, Ind.

<sup>1</sup> Not a trustee.

## Elected

1888	Gen. Alfred C. Barnes.....	Brooklyn
1888	William H. Sage, B. A.....	Ithaca
1888	Daniel E. Salmon, D. V. M.....	Washington, D. C.
1889	Frank H. Hiscock, B. A.....	Syracuse
1889	Hiram W. Sibley.....	Rochester
1889	Hon. Stewart L. Woodford, LL. D.....	New York

## APPOINTED DURING YEAR

1890	Andrew Carnegie.....	Pittsburg
1890	Walter Craig Kerr, M. E.....	New York
1890	Hon. Henry B. Lord.....	Ithaca
1890	Hon. Andrew D. White, LL. D.....	"

## VACANCIES

Rev. George R. Van De Water, D. D., term expired Je 1890  
 Hon. Amasa J. Parker, died 1890

## ADMINISTRATION

Figures in column at left give first year of service in Cornell.

1885 President, Charles Kendall Adams, LL. D., 41 E. av.

B. A. University of Michigan 1861, M. A. 1862; LL. D. University of Chicago 1878, Harvard 1886; Instructor in English and mathematics, University of Michigan 1862-3, History and Latin 1863-4, Assistant professor 1864-7, Professor 1867-85; Honorary member American Historic Genealogical Society. American Antiquarian Society; President American Historical Association 1889-90; Author Democracy and monarchy in France, 1874, (*German trans.*) 1875, Manual of historical literature, 1882, British orations, 1884.

1873 Director of the College of Civil Engineering, Estevan Antonio Fuertes, C. E., M. A. S. C. E.

Ph. B. Conciliar College of San Idelfonso 1855, Ph. D. 1857; C. E. Rensselaer Polytechnic 1861; M. A. S. C. E. 1869; Engineer-in-chief of U. S. expedition to Tehautepec and Nicaragua; Examining engineer of the Croton aqueduct; Member Royal Academy of Letters, Royal Economic Society, Society of Geography and Statistics, American Society of Civil Engineers; Author of many technical reports.

- 1874 Director of the College of Agriculture and of the Cornell Agricultural Experiment Station, Isaac Phillips Roberts, M. Agr., 37 E. av., Campus.

M. Agr. Iowa State Agricultural College 1875; Professor of agriculture, Iowa State Agricultural College 1869-73, Cornell 1873-; Dean College of Agriculture 1874-90; Director Cornell Agricultural Experiment Station 1888-; Director College of Agriculture 1890-; Member Society for the Promotion of Agricultural Science; Fellow American Association for the Advancement of Science; President N. Y. State Dairyman's Association; Examiner for degrees in agriculture, University of Toronto; Contributor to agricultural papers.

- 1876 Dean, Horatio Stevens White, B. A., 23 E. av.

Assistant Professor of Greek and Latin, Cornell 1876-8, of German 1878-83; Professor of German Language and Literature 1883-; Member American Philological Association, Modern Language Association; Honorary Member German Modern Language Association; Author Selections from Lessing's prose, Selections from German prose, 1889, Selections from Heine's poems, 1890; Editor Otis's Elementary German 1889.

- 1886 Dean Susan Linn Sage School of Philosophy, Jacob Gould Schurman, B. A., D. Sc., 9 E. av.

B. A. University of London 1877, M. A. 1878; D. Sc. University of Edinburgh 1878; Hibbert travelling fellow in Germany 1878-80; Professor of logic and rhetoric, Acadia College, N. S. 1880-2; Professor of metaphysics and English literature, Dalhousie College, Halifax 1882-6; Professor of philosophy, Cornell 1886-; Dean Susan Linn Sage School of Philosophy 1890-; Author Kantian ethics and the ethics of evolution, 1881, The ethical import of Darwinism, 1887, Belief in God, 1890; Editor The philosophical review.

- 1887 Dean of Law School, Douglas Boardman, M. A., 22 E. Buffalo st.

B. A. Yale 1842; M. A. Hobart 1849.

- 1888 Principal of Sage College, Mrs Ellen Kelley Hooker.

A. E. Ingham University 1880; Associate principal Burnsted Female Seminary 1854-5; Assistant superintendent of public schools, Dane Co., Wis., 1863-7; Private teacher 1857-67; Teacher French and English, Le Roy Academic Institute 1870-9; Health teacher, Ingham University 1879-81; Principal Ingham University 1881-4; Principal Park Place Boarding School (Batavia) 1884-8.

- 1872 Treasurer, Emmons Levi Williams, 188 E. State st.  
 1877 Assistant to Treasurer, Charles Baker Mandeville, B. S., 63 Eddy st.

B. S. Cornell 1877.

- 1882 Assistant to Treasurer in the Land Office, Horace Mack, 116 Cascadilla pl.

- 1882 Business Manager of Sage College, Edward Payson Gilbert, 166 E. State st.

- 1886 Assistant Secretary, James Furman Kemp, M. A., E. M.

B. A. Amherst 1881; E. M. Columbia 1884; Instructor in geology, Cornell 1886-8; Assistant professor 1888- ; Fellow American Association for the Advancement of Science; Original fellow Geological Society of America; Corresponding member N. Y. Academy of Science; Contributor to various scientific journals.

- 1887 Secretary of Law Faculty, Harry Burns Hutchins, Ph. B.

Ph. B. University of Michigan 1871; School Superintendent 1871-2; Instructor in history and rhetoric, University of Michigan 1872-3; Assistant professor of history and English 1873-6; Professor of law 1884-7; Professor of law, Cornell 1887- ; Revised and annotated vols. 30, 31, 32 and 33 of Michigan Supreme court reports 1882-3.

- 1888 Deputy Director and Secretary of the Cornell Agricultural Experiment Station, Henry Hiram Wing, B. Agr., Reservoir av.

B. Agr. Cornell 1881; Instructor in agriculture and farm superintendent, University of Nebraska 1884-8; Deputy director and secretary Cornell University Agricultural Experiment Station 1888- ; Instructor in dairy husbandry 1890- ; Fellow American Association for the Advancement of Science; Editor Nebraska farmer 1888.

- 1873 Librarian, George William Harris, Ph. B., 142 E. Seneca st.

Ph. B. Cornell 1873; Assistant librarian 1873-83; Librarian 1890- ; Member American Library Association, American Pomological Society, Virginia Historical Society; Editor Library bulletin of Cornell university.

- 1888 Librarian of the President White Library, George Lincoln Burr, B. A., 43 E. av.

B. A. Cornell 1881; Librarian President White library 1878- ; Instructor and examiner in modern history 1881-4; Instructor in Anglo-Saxon 1886-7; Member American Library Association, American Society for Church History, American Historical Association.



1885 Assistant Librarian, Andrew Curtis White, Ph. D., 130 E. Seneca st.

B. A. Hamilton 1881; Ph. D. Cornell 1885; Teacher of Greek and Latin, Cayuga Lake Academy 1881-2; Instructor in Latin, Cornell 1885-6; Instructor in Greek and Latin 1886-9; Assistant librarian 1889-; Member American Philological Association, American Dialect Society.

1889 Delivery Assistant in the Library, Charles Henry Parshall, B. A., 61 E. Buffalo st.

B. A. Cornell 1889.

1888 Delivery Assistant in the Library, Willard Henry Austin, 89 Heustis st.

1890 First Cataloguer in the Library, Mary Fowler.

Cataloguer in the Library, Julia Wells Brown, Sage College.  
Cataloguer in the Library, Gertrude Frances Van Duzen,  
7 Central av.

Cataloguer in the White Library, Ellsworth David Wright,  
B. A.

1890 Cataloguer in the White Library, William H. Hudson.

1885 Registrar, James Owen Griffin.

Educated at Göttingen. Principal Unadilla Academy 1874-9;  
Principal Delaware Academy 1880-5; Member Modern Language Association.

1886 Assistant Registrar, Orrin Leslie Elliot, Ph. D., Dryden road.

Ph. B. Cornell 1885, Ph D. 1890; Fellow in history and political science 1885-6; Instructor in English 1886-; Assistant registrar 1890-; Member American Economic Association, American Academy of Political and Social Science.

Treasurer's Stenographer, Sarah Adelia Beach, 57 N. Geneva st.

Master of the Chime, Clarence Wentworth Matthews, 130 Osmun pl.

## <sup>1</sup>INSTRUCTION

Figures in column at left give first year of service in Cornell and years spent in teaching.

1885 Charles Kendall Adams, LL. D. President.

23 See also "Administration."

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<sup>1</sup> For special faculties see page 941.

- 1868 Rev. William Dexter Wilson, D. D., LL. D., L. H. D. Pro-  
41 fessor of Moral and Intellectual Philosophy (Emeritus),  
Syracuse.

D. D. Hobart 1849; LL. D. Bedford University 1868; L. H. D. University of the State of New York; Professor, Hobart College 1850-68; Published Treatise on logic, 1856, Lectures on psychology, comparative and human, 1871, Text-book on logic, 1872, Introduction to the study of metaphysics, and the history of philosophy, 1872, Live questions on psychology and metaphysics, 1877, Text-book on political economy, 1879.

- 1867 George Chapman Caldwell, B. S., Ph. D. Professor of Agri-  
30 culture and Analytic Chemistry, 11 Central av.

B. S. Harvard 1855; Ph. D. Göttingen 1857; Professor of chemistry, physics and botany, Antioch College 1859-62; Professor of chemistry, Pennsylvania Agricultural College 1864-8; Vice-president Pennsylvania Agricultural College 1866-8; Fellow American Association for the Advancement of Science; Member Association for Promotion of Agricultural Science, American Chemical Society, Association Official Agricultural Chemists; Author Agricultural chemical analysis, 1869; Joint author Introductory chemical practice, 1869, Manual of qualitative chemical analysis, 1885, Notes on chemical analysis, 1887, Elements of chemical analysis, 1890.

- 1867 Burt Green Wilder, B. S., M. D. Professor of Physiology,  
23 Comparative Anatomy and Zoology, 60 Cascadilla pl.

Professor of physiology, Medical School of Maine 1874-84; Lecturer on physiology, University of Michigan 1876; Lecturer on comparative anatomy of vertebrates, Anderson Summer School of Natural History 1873-4; Member American Neurological Association, American Association for the Advancement of Science, American Philosophical Society, Association of American Anatomists, American Anthropometric Society; Author Health notes for students, Emergencies, how to avoid them and how to meet them, What young people should know; (with Professor S. H. Gage) Anatomical technology as applied to the domestic cat.

- 1868 James Law, F. R. C. V. S. Professor of Veterinary Science  
and Surgery.

V. S. Edinburgh Veterinary College 1857; M. R. C. V. S. 1863; F. R. C. V. S. 1870; Demonstrator of anatomy, Veterinary College, Edinburgh 1857; Lecturer on materia medica and anatomy 1857-68; Author Anatomy of the domestic animals, The farmer's veterinary adviser, The lung plague of cattle, First report of the U. S. treasury cattle commission; contributor to various journals of science in England and America.

- 1868 Albert Nelson Prentiss, M. S. Professor of Botany and  
26 Arboriculture, 3 Central av.

B. S. Michigan Agricultural College 1861, M. S. 1864; Professor of botany and horticulture, Michigan Agricultural College 1864-8; Fellow American Association for the Advancement of Science.

- 1868 John Lewis Morris, M. A., C. E. Sibley Professor of Prac-  
tical Mechanics and Machine Construction.

B. A. Union 1856, M. A. and C. E. Union.

- 1868 Thomas Frederick Crane, M. A., Ph. D. Professor of the  
22 Romance Languages and Literatures, 9 Central av.

B. A. Princeton 1864, M. A. 1867, Ph. D. 1874; Assistant professor of Romance languages and literature, Cornell 1868-73; Professor of Spanish and Italian 1873-81; Professor of Romance languages and literature 1881-; Member American Philosophical Society, Royal Academy of Arts and Sciences, Palermo, Sicily; Author Italian popular tales, 1885, *Tableaux de la revolution française*, 1884, *Le romantisme français*, 1887, *La société française en 17e siècle*, 1890, *The exemplar of Jacques de Vitry*, 1890, Associate editor *Journal of American folk-lore*, 1888-90; Member Council of the American Folk-lore Society 1888.

- 1870 Hiram Corson, M. A., LL. D. Professor of English Litera-  
38 ture and Rhetoric.

M. A. Princeton 1864; LL. D. St John's College, Maryland 1878; Assistant librarian and copyright correspondent, Smithsonian Institution 1850-7; Public lecturer on English literature 1859-65; Vice-president and professor of moral science, history and rhetoric, Girard College 1865-6; Professor of Anglo-Saxon, English literature and rhetoric, St John's College 1866-70; Professor of English literature, Anglo-Saxon and rhetoric, Cornell 1870-; Lecturer on English literature, Johns Hopkins 1883-5; Member New Shakspeare Society of London, Browning Society of London; Author *Chaucer's Legende of goode women*, with introduction and note, 1863, *Elocutionary manual*, 1864, *Jaudau's English orthographical expositor*, 1866, *Essay on the study of literature, and on vocal culture, in its relation to an aesthetic appreciation of poetry*, 1867, *Prose translation of Satires of Juvenal*, 1869, *Handbook of Anglo-Saxon and early English*, 1871, *Syllabus of a course of lectures on English language and literature*, 1873, *Jottings on the text*

of Hamlet, 1874, The University of the future, 1875, The claims of literary culture, 1875, The idea of personality and of art as an agency of personality as embodied in Browning's poetry, 1882, Tennyson's Two voices and A dream of fair women, with biographical and general introduction and notes, 1882, The true scholar, 1886, An introduction to the study of Robert Browning's poetry, 1886, An introduction to the study of Shakspeare, 1889.

- 1870 Waterman Thomas Hewett, B. A., Ph. D. Professor of the  
23 German Language and Literature, 31 E. av.

B. A. Amherst 1869; Ph. D. Cornell 1879; Assistant professor of North European Languages, Cornell 1870-81, Professor of German Language and Literature 1881-; Member Frisian Society for History, Archeology and Philology; Member extraordinary Society for Frisian Language and Literature; Author Frisian language and literature, a historical study.

- 1871 Charles Chauncey Shackford, M. A. Professor of Rhetoric  
and General Literature, Emeritus, Brookline, Mass.

- 1871 Rev. Charles Babcock, M. A. Professor of Architecture,  
24 Sage av.

B. A. Union 1847, M. A. 1850; Teacher, St Stephen's College 1856-60.

- 1871 James Edward Oliver, M. A. Professor of Mathematics.

- 19 Member National Academy of Science; Honorary member American Academy of Arts and Sciences; Fellow American Philosophical Society; Fellow American Association for the Advancement of Science.

- 1873 Estevan Antonio Fuertes. Professor of Civil Engineering,  
and Director of the College of Civil Engineering, 13  
E. av.

See also "Administration."

- 1874 Isaac Phillips Roberts, M. Agr. Professor of Applied Agri-  
22 culture and Director of the College of Agriculture and of the Cornell Agricultural Experiment Station, 37 E. av., Campus.

See also "Administration."

- 1876 Horatio Stevens White, B. A. Dean and Professor of the  
16 German Language and Literature, 23 E. av.

See also "Administration."



1873 John Henry Comstock, B. S. Professor of Entomology and Invertebrate Zoology.

B. S. Cornell 1874; Instructor 1873-7; Assistant professor 1877-82; Professor 1882-; Lecturer on zoology, Vassar 1877; U. S. Entomologist 1879-81; Fellow American Association for the Advancement of Science; Member Philosophical Society Washington, Biological Society Washington, Society for Advancement of Agricultural Science; Author Notes on entomology, 1875, Reports of the U. S. entomologist, 1879-80, Report on cotton insects, 1879, Report on insects, 1881, Monograph of the diaspinoe, 1882, Hymenoptera (standard natural history), 1884.

1879 Samuel Gardner Williams, B. A., Ph. D. Professor of the  
40 Science and Art of Teaching, Green and Albany sts.

B. A. Hamilton 1852, M. A. 1855, Ph. D. 1870; Principal Groton Academy 1853-6, 1857-9, Seneca Falls Academy 1856-7, Ithaca Academy 1859-69, Central High School, Cleveland 1869-79; Professor of Geology, Cornell 1879-86; Professor of the science and art of teaching 1886; Fellow American Association for the Advancement of Science, Geological Society of America, American Academy of Political and Social Science; Author Applied geology.

1879 Henry Shaler Williams, Ph. B., Ph. D. Professor of Geology  
23 and Paleontology, 1 E. av.

Ph. B. Yale 1868, Ph. D. 1871; Assistant in paleontology, Yale 1868-70; Professor of Natural History, Kentucky University 1872-9; Professor of paleontology, Cornell 1879-86; Professor of geology and paleontology 1886-; Dean of faculty 1887-8; Assistant paleontologist, U. S. Geological Survey; Fellow Geological Society of London, Société géologique du Nord, Geological Society of America, American Association for the Advancement of Science, American Society of Naturalists; Author Bulletins nos. 3 and 41 of U. S. geological survey, and of many scientific articles and reports.

1880 William Gardner Hale, B. A. Professor of the Latin Lan-  
guage and Literature, 7 E. av.

B. A. Harvard 1870; Fellow in philosophy, Harvard 1870-1, Tutor of Latin 1874-6, Non-resident fellow in classics (at Leipzig and Göttingen) 1876-7, Tutor of Latin 1877-80; Professor of the Latin language and literature, Cornell 1880-; Member American Philological Association, American Dialect Society; Author Art of reading Latin, how to teach it, 1887, Aims and methods in classical education, 1888, The sequence of tenses in Latin, 1887, The *Cum* constructions, their history and functions, 1887-9; Associate editor Classical review; Joint editor Cornell University studies in comparative philology.

1881 Rev. Moses Coit Tyler, M. A., LL. D., L. H. D. Professor of American Constitutional History and Law, 5 E. av.

B. A. Yale 1857, M. A. 1863; LL. D. University of Wooster 1875; L. H. D. University of the State of New York 1883, Columbia 1888; Professor of English language and literature, University of Michigan 1867-81; Member American Historical Association; Corresponding member Massachusetts Historical Society, Rhode Island Historical Society; Author *The Brawnville papers*, 1868, *History of American literature*, 1878, *Manual of English literature*, 1879, *Dean Berkeley's sojourn in America-1729-1731*, *Patrick Henry*, 1887.

1885 Robert Henry Thurston, M. A., LL. D., Doc. Eng. Director  
20 of Sibley College and Professor of Mechanical Engineering, 15 E. av.

Ph. B. Brown, 1859, LL. D. 1889; Doc. Eng. Stevens Institute 1885; Assistant professor of natural and experimental philosophy, and Lecturer on chemistry and physics, U. S. Naval Academy, Annapolis 1866-71; Professor of mechanical engineering, Stevens Institute 1871-85; Fellow American Association for the Advancement of Science; Member Franklin Institute, Pennsylvania, American Institute, N. Y., American Society of Civil Engineers, American Society of Mechanical Engineers, American Institute of Mining Engineers, Institute of England and Shipbuilders of Scotland, Associate Member British Institute of Naval Architects, Member Société des Ingénieurs Civils, Verein Deutscher Ingenieure, Oesterreichische Ingenieur-und-Architekten Verein, Royal Society of Sweden; Author *History of the growth of the steam engine*, 1878, *Treatise on friction and lubrication*, 1879, *Materials of engineering*, 1884, *Materials of construction*, 1885, *Treatise on friction and lost work in machinery and mill work*, 1879, *Stationary steam-engines*, 1884, *Development of the philosophy of the steam engine*, 1881, *Conversion tables*, 1884, *A manual of steam boilers, their design, construction and operation*, 1889, *Steam-boiler explosions in theory and practice*, 1899, *Heat as a form of energy*, 1889, *Hand-book of engine and boiler trials*, 1890, *Reflections on the motive power of heat, and on machines fitted to develop that power*, 1890; Author of many minor scientific papers.

1855 Jacob Gould Schurman, B. A., D. Sc. Dean Susan Linn  
11 Sage School of Philosophy, 9 E. av.  
See also "Administration."

- 1881 Herbert Tuttle, M. A., L. H. D. Professor of the History  
10 of Political and Municipal Institutions and of International  
Law, 11 E. av.

B. A. University of Vermont 1869, M. A. 1880, L. H. D. 1889;  
Lecturer on international law, University of Michigan 1880-1;  
Non-resident professor of English constitutional history and  
international law, Cornell 1881-3; Associate professor of  
history and theory of politics and of international law 1883-87;  
Professor of modern European history 1890; Professor of the  
history of political and municipal institutions and of  
inter-national law 1887-; Member Société de l'Histoire  
Diplomatique, American Historical Association, etc.;  
Author German political leaders, 1876, History of Prussia,  
1884.

- 1886 Benjamin Ide Wheeler, M. A., Ph. D. Professor of Greek  
16 and Comparative Philology, 39 E. av.

B. A. Brown University 1875, M. A. 1878; Ph. D. University of  
Heidelberg 1885; Classical teacher, Providence High School  
1875-79; Tutor, Brown University 1879-81; Instructor, Har-  
vard 1885-86; Professor of comparative philology and  
instructor in classics, Cornell 1886-88; Member American  
Oriental Society, American Philological Association; Author  
Der griechische nominal accent, 1885, Analogy and the scope  
of its application in language, 1887; Joint editor Cornell  
classical studies.

- 1887 Douglas Boardman, M. A. Dean of the Law School, 22 E  
4 Buffalo st.

See also "Administration."

- 1887 Harry Burns Hutchins, Ph. B. Professor of Law and Sec-  
10 retary of the Law Faculty.

See also "Administration."

- 1887 Charles Avery Collin, M. A. Professor of Law.

7 B. A. Yale 1866, M. A.; Instructor, Norwich, Conn. Free Acad-  
emy 1866-70.

- 1887 Francis Marion Burdick, M. A. Professor of Law,  
South av.

10 B. A., M. A. and LL. B. Hamilton; Professor of law and  
political science, Hamilton 1882-7.



- 1887 Edward Leamington Nichols, B. S., Ph. D. Professor of  
10 Physics, South av.

B. S. Cornell 1875; Ph. D. Göttingen 1879; Fellow Johns Hopkins 1879-80; Professor of physics and chemistry, Central University Kentucky 1881-3; Professor of physics and astronomy, University of Kansas 1883-7; President Kansas Academy of Science 1885; Vice-president American Institute of Electrical Engineers; Fellow American Association for the Advancement of Science; Honorary member National Electric Light Association; Author of many scientific monographs.

- 1888 Liberty Hyde Bailey, M. S. Professor of General and  
6 Experimental Horticulture, 3 E. av.

B. S. Michigan Agriculture College 1882, M. S. 1886; Professor of horticulture and landscape gardening, Michigan Agricultural College 1885-8; Honorary member Massachusetts and Kansas Horticultural Societies; Author Talks afield, 1885, Field notes on apple culture, 1886, Horticulturists' rule-book, 1889, Annals of horticulture, 1889; Editor The American garden.

- 1883 Edward Hitchcock, jr, M. A., M. D. Professor of Physical  
11 Culture, Lecturer in Hygiene and Director of the Gymnasium, South av.

Instructor in elocution, Massachusetts Agricultural College 1880-82, Amherst 1883-84; Assistant in physical culture, Amherst 1880-84; Ex-vice-president American Academy of Medicine; Secretary American Association for the Advancement of Physical Education.

- 1889 Herbert Everett Tutherly, M. A., 1st Lieutenant, 1st Cavalry,  
U. S. A. Professor of Military Science and Tactics,  
Reservoir av.

- 1881 Spencer Baird Newbury, E. M., Ph. D. Acting Professor of  
9 General, Organic and Applied Chemistry, 29 E. av.

E. M. Columbia 1878, Ph. D. 1880; Instructor in chemistry, Cornell 1881-2; Assistant professor 1882-6; Acting professor 1886-; Fellow American Association for the Advancement of Science; Member German Chemical Society, English Society of Chemical Industry; Officier d'Instruction Publique (France); Expert Commissioner of U. S. to Paris Exposition 1889.

- 1870 Lucien Augustus Wait, B. A. Associate Professor of Mathe-  
22 matics, 35 E. av.

B. A. Harvard 1870; Assistant professor of mathematics, Cornell 1870-7; Associate professor of mathematics 1877-



- 1873 Edwin Chase Cleaves, B. S. Associate Professor of Free  
18 Hand Drawing and Mechanical Drawing, Cortland.

B. S. Worcester Polytechnic Institute.

- 1887 Brainard Gardner Smith, M. A. Associate Professor of  
4 Elocution and Oratory, 3 Grove pl., Campus.

B. A. Hamilton 1872, M. A. 1887.

- 1878 Simon Henry Gage, B. S. Associate Professor of Physiology,  
13 and Lecturer on Microscopical Technology, South av.

B. S. Cornell 1877; Instructor in microscopy and practical physiology, Cornell 1878-81; Assistant professor of physiology and lecturer in microscopical technology 1881-8; Associate professor of physiology, and lecturer on microscopical technology 1888- ; Member American Society of Microscopists, American Society of Naturalists, American Association of Anatomists; Fellow American Association for the Advancement of Science; Author The microscope and histology, 1881 (with Professor Wilder), Anatomical technology, 1882; Collaborator Foster's Encyclopædic medical dictionary; Contributor to many scientific papers.

- 1874 Charles Lee Crandall, C. E. Assistant Professor of Civil  
17 Engineering, in charge of Road Engineering and Geodesy,  
100 Hector st.

B. C. E. Cornell 1872, C. E. 1876; Instructor in civil engineering, Cornell 1874; Assistant professor of civil engineering 1875- ; Member American Society of Civil Engineers; Aid U. S. Coast Survey 1878; Author Tables for the computation of railway and other earthwork, 1886, Notes on shade, shadow and perspective; Joint author Notes on descriptive geometry.

- 1876 Irving Porter Church, C. E. Assistant Professor of Civil  
18 Engineering, in charge of Applied Mechanics, 151 Seneca st.

B. C. E. Cornell 1873, C. E. 1878; Master Ury House School, Fox Chase, Philadelphia 1873-76; Author Mechanics of engineering, 1890.

- 1874 William Russel Dudley, M. S. Assistant Professor of Cryptogamic Botany, 108 Cascadilla pl.

B. S. Cornell 1874, M. S. 1876; Instructor in botany, Cornell 1874-7; Assistant professor of botany 1877-84; Assistant professor of cryptogamic botany 1884- ; Fellow American Association for the Advancement of Science; Member American Society of Naturalists; Author The Cayuga flora, 1886, Preliminary list of the vascular plants of the Lackawanna and Wyoming Valleys, 1887, Directions for laboratory work, Anatomy and histology of plants, 1887.

- 1877 George William Jones, M. A. Assistant Professor of Mathematics, 17 Stewart av.  
29

B. A. Yale 1859, M. A. 1862; Teacher of mathematics, Collegiate and Commercial Institute, New Haven 1859-62; Teacher of mathematics, Delaware Literary Institute 1862-8, Principal 1864-8; Professor of mathematics, Iowa Agricultural College 1868-74; Assistant professor of mathematics, Cornell 1877-; Member Association for the Improvement of Geometrical Teaching, England; Author (with Professors Oliver and Wait) Treatise on algebra and Treatise on trigonometry; Compiler set of logarithmic tables; Computer Set of interest tables.

- 1875 George Sylvanus Moler, B. A., B. M. E. Assistant Professor of Physics, 119 N. Aurora st.

B. M. E. Cornell 1875; B. A. Hedding College 1882; Instructor in physics, Cornell 1875-81; Professor of physics 1881-.

- 1880 Charles Francis Osborne. Assistant Professor of Architecture.

Instructor in architecture, Cornell 1880-1; Assistant professor 1881-; Correspondent of various architectural journals.

- 1887 Albert William Smith, M. M. E. Assistant Professor of Mechanical Engineering, 206 E. State st.

B. M. E. Cornell 1878, M. M. E. 1886; Resident graduate, Cornell 1886, Fellow 1886-7, Assistant professor mechanical engineering 1887-; Member American Society of Mechanical Engineers.

- 1888 George Prentice Bristol, M. A. Associate Professor of Greek, 63 Eddy st.  
11

B. A. Hamilton 1876, M. A. 1884; Assistant professor of Greek and philology, Hamilton 1882-8; Assistant Professor of Greek, Cornell 1888-90; Associate Professor of Greek 1890-.

- 1886 James Furman Kemp, M. A., E. M. Assistant Professor of Geology and Mineralogy and Assistant Secretary of the Faculty.  
5

See also "Administration."

- 1888 Alfred Bruce Canaga, B. S. Passed Assistant Engineer, U. S. N. Assistant Professor of Mechanical Engineering, and Instructor in Marine Engineering, 69 Heustis st.  
6

B. S. Scio College, 1872; Graduated U. S. Naval Academy 1874; Instructor in marine engineering in U. S. Naval Academy 1881-84; Member American Society Naval Engineers.

1888 George Lincoln Burr, B. A. Assistant Professor of History  
7 and Librarian of the President White Library, 43 E. av.  
See also "Administration."

1888 Harris Joseph Ryan, M. E. Assistant Professor of Electrical  
3 Engineering, 31 Dryden road.

M. E. Cornell 1887; Instructor in physics, Cornell 1888-9; Fellow American Association for the Advancement of Science; Associate member American Institute of Electrical Engineers; Associate editor *The Crank* 1890.

1888 Herbert Charles Elmer, B. A., Ph. D. Assistant Professor  
4 of Latin, 77 Heustis st.

B. A. Cornell, 1883; Ph. D. Johns Hopkins 1888; Fellow, Johns Hopkins 1886-7; Assistant in Latin, Johns Hopkins 1888; Member American Philological Association; Author *The copulative conjunctions, que, et, atque, in the inscriptions of the republic, in Terence and in Cato.*

1884 James McMahon, M. A. Assistant Professor of Mathe-  
10 matics, 1 Quarry st.

B. A. Trinity College, Dublin 1881, M. A. 1890; Examiner in mathematics, Cornell 1883-4; Instructor in mathematics 1884-90; Assistant professor 1890-; Member American Association for the Advancement of Science, London Mathematical Society; Contributor to Mathematical Journals.

1885 James Owen Griffin, Instructor in German, 229 E. State st.

1885 Arthur Stafford Hathaway, B. S. Assistant Professor of  
6 Mathematics, 19 Stewart av.

B. S. Cornell 1879; Professor of Mathematics, Friends' High School, Baltimore 1879-80; Fellow, Johns Hopkins 1882-4; Instructor in mathematics, Cornell 1885-90; Assistant professor 1890-.

1886 Orrin Leslie Elliot, Ph. D. Instructor in English and  
7 Assistant Registrar, Dryden road.

See also "Administration."

1886 Eugene Henry Preswick, B. S. Instructor in Qualitative  
Analytic Chemistry, Forest home.

1887 Charles Benjamin Wing, C. E. Assistant Professor of Civil  
4 Engineering, 38 Hazen st.

C. E. Cornell 1886; Fellow and Instructor in engineering 1886-7; Instructor in civil engineering 1887-90; Assistant professor of civil engineering 1890-.



- 1887 William Ridgely Orndorff, B. A., Ph. D. Assistant Professor of General and Organic Chemistry, 163 E. Buffalo st.  
4  
B. A. Johns Hopkins 1884, Ph. D. 1887; Assistant in chemistry, Johns Hopkins 1884-6, Fellow 1886-7; Instructor in chemistry, Cornell 1887-90; Assistant professor 1890-; Member German Chemical Society, Berlin; Society of Chemical Industry, London; Contributor to American chemical journal.
- 1887 Ludlow Eliakim Lapham, B. A. Instructor in French, 10 Stewart av.
- 1887 Duane Studley, B. S. Instructor in Mathematics, 71 Dryden road.  
12  
B. S. Cornell 1881; Teacher of mathematics, Cleveland High School 1882-6.
- 1887 Richard Francis Nelligan, Instructor in Gymnastics, 96 E. Seneca st.
- 1887 Herman Klock Vedder, C. E. Instructor in Civil Engineering, 48 W. Seneca st.
- 1887 Theodore Henckels, B. S. Instructor in German, 51 Hazen st.
- 1888 Frank Hovey Noyes. Instructor in Industrial Art, 96 E. 5 Seneca st.  
Graduate of Massachusetts Normal Art School 1887; Member Massachusetts Art Association.
- 1888 Hiram Samuel Gutsell, B. P., M. A. Instructor in Drawing and Industrial Art, 26 Hazen st.
- 1889 Frank Melville Bronson, M. A. Instructor in Greek and Latin, 98 N. Aurora st.
- 1888 Walter Loring Webb, C. E. Instructor in Civil Engineering, 5 40 Hazen st.  
B. C. E. Cornell 1884, C. E. 1889; Instructor in drawing, Baltimore and Ohio Technological School 1885-7; Editor Crandall's notes on shades, shadows and perspective.
- 1888 Harvey Daniel Williams, M. E. Assistant Professor of 2 Mechanical Drawing and Designing, 100 Cascadilla pl.  
M. E. Stevens Institute of Technology 1885; Member American Society of Mechanical Engineers.
- 1888 George Welton Bissell, M. E. Instructor in Sibley College, 2 170 Cascadilla pl.  
M. E. Cornell 1888; Junior member American Society Mechanical Engineers 1890.



- 1888 Benjamin Warner Snow, B. S. Instructor in Physics, 63 Eddy st.
- 1888 Willard Winfield Rowlee, B. L. Instructor in Botany, 40 2 Heustis st.  
Member American Microscopical Society.
- 1889 James Edwin Creighton, B. A. Instructor in Philosophy, 4 69 Heustis st.  
B. A. Dalhousie College, Halifax 1887; Principal Sydney Academy and Superintendent of schools 1887-8; Fellow in philosophy, Cornell 1888-9; Instructor in philosophy 1889.
- 1889 Ernest George Merritt, M. E. Instructor in Physics, 69 1 Heustis st.  
Member American Association for the Advancement of Science, American Institute of Electrical Engineers.
- 1889 Oliver Farrar Emerson, M. A. Instructor in English, 69 8 Heustis st.  
B. A. Iowa College 1882, M. A. 1885; Superintendent of public schools, Grinnell, Iowa 1882-4; Superintendent of schools, Muscatine, Iowa 1884-5; Principal Academy of Iowa College 1885-8; Fellow in English, Cornell 1888-9; Instructor in English 1889-; Secretary American Dialect Society for Western New York.
- 1889 Henry Neely Ogden, C. E. Instructor in Civil Engineering, 9 E. Buffalo st.
- 1889 William Belknap Newbury, Ph. B. Instructor in Chemistry, 1 163 E. Buffalo st.  
Ph. B. Yale 1889.
- 1889 Albert Paul Willis. Instructor in Free Hand Drawing, 100 2 Cascadilla building.  
Teacher of drawing, Pennsylvania School of Industrial Art, for one year.
- 1889 Charles Sumner Fowler, B. A. Instructor in Mathematics, 1 10 Stewart av.  
B. A. Cornell 1888.
- 1889 William Mason Towle, B. S. Instructor in Mechanical Engineering and Foreman of the Machine Shop, 63 Eddy st.  
B. S. Worcester Polytechnic Institute 1877; Instructor, Machine Tool Work and Foreman Machine Shop, Rose Polytechnic Institute, Terre Haute 1886-8; Member American Society Mechanical Engineers.

- 1889 Walker Glazier Rappleye, B. S. Instructor in Mathematics, Orchard house.
- 1889 Samuel J. Saunders, B. A. Instructor in Physics, 22  
1 Lake st.  
B. A. University of Toronto 1888.
- 1886 James Wheat Granger. Instructor in Forging, Exchange hotel.
- 1886 William Henry Wood. Instructor in Woodworking, 72 W. Mill st.
- 1886 James Elijah Vanderhoef. Instructor in Moulding, Sibley college.
- 1887 Fred Clarkson Fowler. Mechanician and Instructor in Physics, 75 W. Mill st.
- 1889 George Pollay. Instructor in the Wood Shop, 86 W. Seneca st.
- 1889 Levi Frederick Chesebrough. Instructor in Mechanic Arts, 134 E. State st.
- 1889 William Ogden Kerr. Assistant in Meteorology and Meteorological Observer, 101 Cascadilla pl.  
George W. Tailby. Assistant to the Professor of Agriculture, and Foreman of the Farm, Reservoir av.
- 1872 Robert Shore. Assistant to the Professor of Botany and Head-Gardener, 23 Hazen st.  
Vernon Freeman Marsters, B. A. Assistant to the Professor of Geology, 114 University av.
- 1889 Grant Sherman Hopkins, B. S. Instructor in Anatomy, 1  
1 Histology and Microscopy.  
B. S. Cornell 1889; Assistant in anatomy 1889-90, Instructor in anatomy, histology and microscopy 1890-; Member American Society Microscopists.
- 1889 Harry Snyder, B. S. Assistant in Analytic Chemistry, 16  
1 Lake st.  
B. S. Cornell 1889; Assistant chemist, Cornell Experiment Station 1890-; Member American Chemical Society.
- 1890 A. Eiloart, B. S., Ph. D. Instructor in Quantitative Analysis, 3  
3 163 Buffalo st.  
B. S. London University 1883; Ph. D. Leipzig University 1889; Teacher of chemistry and physiology, King's College, London 1883-4; Assistant in chemistry and physics, New York College of Pharmacy 1890.

- 1868<sup>1</sup> James Morgan Hart, M. A. Professor of Rhetoric and  
18 English Philology, Reservoir av., Campus.

B. A. Princeton 1860, M. A. 1863; J. U. D. Göttingen 1864; Assistant professor of modern languages, Cornell 1868-72; Professor of modern languages and English literature, University of Cincinnati 1876-90; Professor of rhetoric and English philology, Cornell 1890—; Member American Philosophic Society, Philological Society, London, Modern Language Association; President American Dialect Society; Published *England social and political*, translated from French of Langel, 1874; Author of *German university*, 1874, *Syllabus of Anglo-Saxon literature*, 1881; Edited, with notes, *Goethe's Hermann and Dorothea*, 1875, *Schiller's Piccolomine*, 1875, *Goethe's Select prose*, 1876, *Goethe's Faust* (first part), 1878; Contributor to various journals.

- P. A. Fish, B. S. Instructor in Physiology and Zoology,  
231 E. State st.

B. S. Cornell 1890; Member American Society Microscopists and Association American Anatomists.

- 1890 L. T. Young, Instructor in architecture.

- 1890 V. E. Coffin, B. A. Instructor in English, 114 Univer-  
5 sity av.

B. A. Dalhousie College, Halifax 1887; Instructor in English, Cambridge House School, Halifax 1885-6; Instructor in classics, Charlottesville, Va. Academy 1888-9; Instructor in history, Cascadilla, Ithaca, 1889-90.

- 1890 J. Lawrence Laughlin, M. A., Ph. D. Professor of Political  
16 Economy and Finance, 3 Central av.

B. A. Harvard 1873; M. A. and Ph. D. 1876; Assistant Professor of political economy, Harvard 1883-87; Member l'Institut International de Statistique 1885; Corresponding member Société d'Études Sociale et Politiques 1890; Author *Mill's principles of political economy*, 1884, *Study of political economy*, 1885, *History of bi-metallism in the U. S.*, 1885, *Gold and prices since 1873*, 1887.

- 1890 R. C. Carpenter. Associate Professor of Experimental  
22 Engineering.

C. E. University of Michigan 1875; M. S. Michigan Agricultural College 1876; M. M. E. Cornell 1888; Professor of engineering and mathematics, Michigan State Agricultural College 1876-90; Member American Society Mechanical Engineering, Michigan Engineering Society.

- 1890 V. F. Marsters. Instructor in Geology.

<sup>1</sup> Original service; re-appointed 1890.

CORPS OF AGRICULTURAL EXPERIMENT STATION

Isaac Phillips Roberts, M. Agr. Director and Agriculturist.

See also page 924.

Henry Hiram Wing, B. Agr. Deputy Director and Secretary.

See also page 925.

George Chapman Caldwell, B. S., Ph. D. Chemist.

See also page 927.

James Law, F. R. C. V. S. Veterinarian.

See also page 927.

Albert Nelson Prentiss, M. S. Botanist and Arboriculturist.

See also page 928.

John Henry Comstock, B. S. Entomologist and Invertebrate Zoologist.

See also page 930.

Henry Shaler Williams, Ph. B., Ph. D. Geologist.

See also page 930.

Liberty Hyde Bailey, M. S. Horticulturist.

See also page 933.

Simon Henry Gage, B. S. Anatomist.

See also page 934.

William Russel Dudley, M. S. Cryptogamic Botanist.

See also page 934.

1888 Welton Marks Munson, B. S. Assistant Horticulturist, 40  
2 Heustis st.

B. S. Michigan Agricultural College 1888.

John Moore Stedman, B. S. Assistant Entomologist, 148  
Cascadilla pl.

<sup>1</sup>SPECIAL FACULTIES

*Arts*—Professor W. G. Hale, Professors Wheeler, Oliver, Schurman, Bristol, and Elmer

*Letters*—Professor Corson, Professors Crane, Hewett, Wait, White, Wilder, Schurman, B. G. Smith, Brown, and E. E. Hale, jr

*Philosophy*—Professor Schurman, Professors Nichols, Comstock, Crane, Oliver, Prentiss, Caldwell, White, H. S. Williams, S. G. Williams, W. G. Hale, Wheeler, and Wilder

*Science*—Professor Wilder, Professors Comstock, Crane, Hewett, Prentiss, Caldwell, Nichols, Wait, and H. S. Williams

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<sup>1</sup>For professors' chairs, see preceding pages.



*Agriculture* — Professor Roberts, Professors Caldwell, Comstock, Law, Prentiss, Bailey, and H. S. Williams

*Architecture* — Professor Babcock, Professors Fuertes, Oliver, Cleaves, and Osborne

*Chemistry and physics* — Professor Caldwell, Professors Nichols, Newbury, Moler, and Ryan

*Civil engineering* — Professor Fuertes, Professors Nichols, Thurston, Oliver, Caldwell, Church, Crandall, and Marx

*Mathematics* — Professor Oliver, Professors Wait, Jones, Nichols, Babcock, Fuertes, Morris, and Thurston

*The Sibley College of Mechanical Engineering and the Mechanic Arts* — Professor Thurston, Professors Nichols, Fuertes, Morris, Caldwell, Oliver, Cleaves, A. W. Smith, and Canaga

*Natural history* — Professor Prentiss, Professors Comstock, Law, Wilder, H. S. Williams, Bailey, Dudley, and Gage

*History and political science* — Professor Tyler, Professors Tuttle, Crane, W. G. Hale, Hewett, White, Burr, and Hodder

#### VACANCIES

Charles David Marx, C. E. Assistant professor of civil engineering, in charge of the graphics of engineering. Resigned Je 1890.

Frank Heywood Hodder, Ph. M. Assistant professor of political economy and finance. Resigned Je 1890.

Edward Everett Hale, jr, B. A. Acting assistant professor of English literature and secretary of the faculty. Resigned Je 1890.

Edwin Miles Brown, Ph. B. Acting assistant professor of English literature. Resigned Je 1890.

Courtney Langdon. Instructor in Romance languages. Resigned Je 1890.

Eugene West Manning, M. A., Ph. D. Instructor in Romance languages. Resigned Jl 1890.

William Angell Viall. Instructor in practical pharmacy, lecturer on materia medica, and secretary of the school of pharmacy. Resigned Jl 1890.

Edwin Hamlin Woodruff, LL. B. Instructor in English. Resigned Je 1890.

Herbert Elmer Mills, M. A. Instructor in ancient history. Resigned Je 1890.

George Arlin Ruyter, B. A. Instructor in Romance languages. Died Jl 1890.

John Albert Miller, M. S., M. A., Ph. D. Instructor in chemistry. Resigned D 1889.

Arthur Hastings Grant, Ph. B. Registrar and secretary. Resigned Je 1890.

Henry John Potter. President's stenographer. Resigned D 1889.

Charles Henry Hull, Ph. B. Assistant librarian. Resigned Jl 1890.

Owen Lincoln Potter, Assistant in the law library. Resigned Je 1890.

John Tracy Morrison, B. A. Assistant in the law library. Resigned Je 1890

William Parker Cutter, B. S. Assistant chemist. Resigned Je 1890.

Ed Tarbell, B. S. Assistant agriculturist. Resigned Je 1890.

#### APPOINTED DURING YEAR

A. Eiloait. Instructor in quantitative analysis.

James Morgan Hart, M. A. Professor of rhetoric and English philology.

William H. Hudson. Cataloguer in White library.

Grant S. Hopkins, B. S. Instructor in Anatomy.

P. A. Fish, B. S. Instructor in physiology and zoology.

L. T. Young. Instructor in architecture.

V. E. Coffin, B. A. Instructor in English.

James L. Laughlin, Ph. D. Professor of political economy and finance.

Mary Fowler. First cataloguer of university library.

R. C. Carpenter. Associate professor of experimental engineering.

V. F. Marsters. Instructor in geology.

#### PROMOTIONS

Brainard Gardner Smith, M. A. Associate professor of elocution and oratory, from associate professor of rhetoric and oratory.

George Prentice Bristol, M. A. Associate professor of Greek, from assistant professor of the same.

Herbert Charles Elmer, B. A., Ph. D. Assistant professor of Latin, from acting assistant professor of the same.

James McMahon, B. A. Assistant professor of mathematics, from instructor of the same.

Arthur Stafford Hathaway. Assistant professor of mathematics, from instructor of the same.

Charles Benjamin Wing, C. E. Assistant professor of civil engineering, from instructor of the same.

William Ridgely Orndorff, B. A., Ph. D. Assistant professor of general and organic chemistry, from instructor of the same.

Harvey Daniel Williams, M. E. Assistant professor of mechanical drawing and designing, from instructor of the same.

### HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Sibley prizes in mechanic arts	Value
First, Herbert Wade Hibbard, B. A., Providence . . . . .	\$100
Second, James Edward Kress, Johnstown, Pa. . . . .	100
Third, Norman Frank Ballantyne, Ottawa, Canada . . . . .	100
Fourth, Roswell Carter Williams, jr, Brooklyn . . . . .	100
Fifth, Oren Gibson Heilman, Williamsport, Pa. . . . .	100
The New Shakspeare Society prize — (books)	
For best examination on Shaksperian work of the year, Walter Cochrane Bronson, B. A., Ithaca. . . . .	
The Mrs A. S. Barnes Shakespeare prize	
For best essay on some subject connected with the plays of Shakspeare, Walter Cochrane Bronson, B. A., Ithaca. . . . .	60
The '86 Memorial prize in declamation, Willard Henry Austin, Jackson, Mich . . . . .	30
The Woodford prize (gold medal)	
For best English oration, Frank Addison Abbott, Abbott's Corners . . . . .	100
Cornell Scholarship, Wellyn Brayton Clark, Castorland. . . . .	200
H. B. Lord " Arthur Charles Howland, South Danby	200
McGraw " Albert Henry Perkins, Granby Center.	200
Sage " May Ransom Fitzpatrick, Brooklyn. . . . .	200
Sibley " Norman Frank Ballantyne, Ottawa, Canada . . . . .	200
Pres't White Scholarship, Clark Sutherland Northrup, Edmeston . . . . .	200
Cornell Fellowship in history and political science, Archi- bald Angus Freeman, B. A., Ithaca . . . . .	400

	Value
McGraw Fellowship in classics, Arthur Gordon Laird, B. A., Ithaca . . . . .	300
Sage Fellowship in zoology and botany, Harry Waldo Norris, B. A., Ithaca . . . . .	400
Schuyler Fellowship in agricultural chemistry, William Alphonso Withers, M. A., Ithaca . . . . .	400
Sibley Fellowship in mechanical engineering, William Wilberforce Churchill, M. E., Ithaca . . . . .	400
Goldwin Smith Fellowship in English literature, Walter Cochrane Bronson, B. A., Ithaca . . . . .	400
Pres't White Fellowship in history and political science, James Christian Hanson, B. A., Ithaca . . . . .	400
Erastus Brooks Fellowship in physics and mathematics, <sup>1</sup> Samuel J. Saunders, B. A., Ithaca . . . . .	400
James Gayford Witton, B. A., Ithaca	

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

### DEPARTMENTS OF INSTRUCTION

#### Ancient classics

##### 1 — GREEK

The courses of study in the department of Greek have been arranged with distinct reference to the fact that the course in arts does not require the study of Greek after the sophomore year, and, furthermore, with reference to the principle, that the choice of this course does not by any means imply an intention to specialize in Greek.

The work of the freshman year is directed toward cultivating the ability of reading easily and at sight. The class will be divided on the basis of scholarship into two numerically equal sections at the beginning of each term, and both sections will cover essentially the same ground, and pass the same examinations.

The required work of the sophomore year aims at giving the student some acquaintance with the scope and meaning of Greek literature and with the characteristics of Greek thought.

<sup>1</sup> Resigned.



The elective work of the department falls under three distinct heads:

1 *The literature.* Four reading courses accompanied by lectures are offered, two of which are given each year; viz., a course in the drama, a course in the historians and orators, a course in the philosophers, and a course in the lyric and epic poets.

2 *The antiquities.* See "Courses offered in each department"—Greek, course 7.

3 *The language.* Lectures on Greek grammar from a historical point of view are given in alternate years. The exercises of the philological seminary are especially adapted to the needs of prospective teachers of the classics, and the seminary room has been equipped with a carefully selected reference library of over 600 volumes, and will be used as a regular study room and laboratory by the more advanced students.

A course in elementary Greek has been added for the advantage of non-Greek students, who for any reason may have found it desirable to acquire at least a rudimentary knowledge of the language, and are willing to incur the labor incident to doing two years' work in one. The course cannot be used to make up conditions in the entrance examinations, it cannot be counted for graduation in the course in arts, and it cannot, without much additional study, serve as a preparation for the entrance examination.

## 2 — LATIN

The aim of the work in Latin covers several distinct heads:

1—To teach students of fair ability and of industry to read Latin understandingly and rapidly, without translating.

2—To give to students who acquire this power the opportunity of making a considerable acquaintance with the literature of the language, with the history of the development of the literature, and with the political and social development of the Roman people.

3—To afford a more thorough and sympathetic knowledge of Roman private life than the courses in the literature alone would give.

4—To offer to students whose interest extends to the scientific aspects of the language advanced courses, partly by lectures, and partly by work in the seminary, in tracing the development of the forms from the earliest stage of the language known to us, in the

study of these forms from a comparative point of view, and in the advanced study of the origin and development of the syntactical uses of the language, and of the beginnings of their decay.

### 3 — COMPARATIVE PHILOLOGY

The work in comparative philology is planned with reference to the needs : first, of the general student with linguistic interests ; second, of those proposing to be teachers of language, and more especially, of the classical languages ; third, of those who propose to devote themselves to the special scientific study of the Indo-European languages.

To the first mentioned class of students course 1 is especially adapted. For those who propose to be teachers of other than the classical languages the course in comparative grammar is recommended in addition to course 1. The courses on Greek and Latin grammar, and the seminary work on the Greek dialects are of the first importance for prospective teachers of the classics, and for such work a preliminary study of the elements of Sanskrit is considered eminently desirable, though not absolutely essential. For such as may wish to devote themselves exclusively to the study of comparative philology, there will be offered, as occasion may demand, in addition to the courses already announced, a more advanced course in Sanskrit, and special courses in the comparative grammar of other branches of the Indo-European family of languages.

### Germanic languages

The aim of the first two years in German, besides preparing the student for progressive and independent work, is to afford those who have not a full classical training some grammatical and linguistic discipline, an insight into the relations between German and English, and a certain degree of literary culture.

During the junior and senior years occur lectures and recitations, with elective classes, on German history, literature, and mythology ; and courses are given varying from year to year, embracing the works.

The seminary system of study for advanced students has been employed in the department for several years with satisfactory results. To different members of such classes different portions of the same general subject are assigned, with references to the

proper authorities or sources; or individual members pursue individual courses of reading under the supervision of the professor in charge. Lectures for those intending to be teachers are also given on class-room methods and theories of instruction in the modern languages; and generous provision has been made by the University for the use of lantern slides for illustrative purposes.

### Romance languages

Provision is made in the department of French for the wants of two classes of students; those in the technical, and those in the general courses. Students in the technical courses are instructed five times a week for one year in the principles of French grammar, writing of exercises, and reading of simple prose. It is expected that the instruction thus received will enable the student to read ordinary French scientific works and the French text-books which may be used in his course. Students in the general courses are divided into two classes; those who have had a Latin preparation, and those who have not. The former are instructed three times a week for the first year; the latter five times. The two sections are united in the second year when the object of study is more literary than philosophical. The instruction during the first year is essentially the same for all courses. In the second year two hours a week are devoted to reading advanced French and the study of the history of the literature, with special reference to its principal schools or movements. One hour a week is given up to French composition, dictation, and pronunciation.

The required course ends with the second year, but more advanced instruction is given for one or two years more as may be desired. The instruction in the department is so planned that a student who pursues French for three or four years has an opportunity to study every period in French literature from the mediæval to the modern. Special instruction is also provided for graduates and other advanced students in French philology, Old French and Provençal.

The courses in Spanish and Italian are of two years each, two hours a week. The grammar is rapidly studied the first term, and reading begun in the second. In the second year more advanced works in Spanish and Italian are read; in the former Cervantes and Calderon; in the latter selections from Dante,



Petrarch and Boccaccio, with lectures on the history of the literature. Advanced instruction is given in Spanish and Italian philology.

The library is well provided with materials for the special study of the literature of the 17th century and of the Romantic school, while means are not wanting for the study of other periods, and of the other Romance literatures and philology.

## English language and literature

### 1 — RHETORIC

During the first year two hours a week of class-room work are required of all students, and are devoted mainly to a systematic examination of the intellectual qualities of style. The text-book is supplemented by lectures, discussions, and a variety of composition exercises designed to test the student's command of clear, forcible and graceful English, so far as these qualities depend upon choice of words and arrangement.

In the second year, subjects are given out, at the beginning of each term, and the instructor makes suggestions as to the mode of treatment, etc.

During the third year all students in the general courses and in agriculture, are required to take the course of two hours a week in advanced rhetoric. This consists of lectures and text-book instructions with the writing of themes. Students are required to choose their own subjects, and such subjects are especially recommended as are in the line of their regular work.

### 2 — ELOCUTION AND ORATORY

In the junior year, the first term is devoted to the study of Mandeville's Elements of reading and oratory, to special work in vocal gymnastics, and to exercises in articulation and enunciation. The second and third terms are devoted to the practical application of the elements of reading and oratory, and to instructions in general delivery.

In the senior year, each student electing the work is required to write orations as the professor may direct. Each oration is read and criticised with the writer, who is then instructed as to its proper delivery. To give the students experience before audiences, there are weekly oratorical exercises, which are open to all students and visitors who may wish to attend.



## 3 -- THE ENGLISH LANGUAGE

The English language is studied in its historical development from the Anglo-Saxon period to the 19th century.

Anglo-Saxon grammar, and the Anglo-Saxon literature from King Ælfred's period down to the last year of the Anglo-Saxon Chronicle (1140), are made a text-book study, the bearings of the language upon modern English receiving special attention. Instruction in the subsequent language and literature down to the Wycliffite versions of the Bible, and the Vision of William concerning Piers Plowman, is given through lectures. Chaucer is made a text-book study, and special importance is attached to the pronunciation of his language, chiefly according to that determined by Ellis, in his Early English pronunciation. The greater part of a term is usually devoted to the reading of The Canterbury Tales, and to lectures on Chaucer's England, and on the current of the subsequent language down to the Elizabethan period.

Several lectures are given on Elizabethan English, and, in addition thereto, the language of this period is studied, in class, on the basis of a number of plays of Shakspeare, and Bacon's Essays.

Such features of the language as have been subsequently developed, are treated, as occasion offers, in the lectures on the literature of the 17th, 18th and 19th centuries.

A course of lectures is also devoted to the history of the language, considered from a more strictly philological point of view. It has to do especially with the phenomena of English speech in its various phases as the result of development out of precedent types, and investigates the sources of its vocabulary, and the laws of its growth in sound, in force and in syntax.

## 4 — ENGLISH LITERATURE .

In the sophomore year a general survey is made of English prose through Minto's Manual of prose literature, which is supplemented, in various respects, by the talks of the instructor.

In the junior and senior years lectures are given on English literature, from the 14th to the 19th century, inclusive, the principal courses, or groups, being, 1 — On Wycliffe, the Vision of William concerning Piers Plowman, Chaucer and Gower. 2 — On Shakspeare; this embraces about 40 lectures, which are specially devoted to the dramatic art, the action, and the moral proportion of about 15 plays, representing the poet's early,

middle, and late work. 3—On Milton's poetical and prose works. 4—On the drama of the restoration, and on the subsequent drama to Goldsmith and Sheridan. 5—On Pope and the principal contemporary poets and prose writers. 6—On the revival in English poetry; the Ossian controversy; Bishop Percy's *Reliques* of ancient English poetry; Burns; Cowper. 7—Wordsworth's protest against the artificial school of Pope; the lyrical ballads; the influence of the French Revolution on the English literature of the period; the poetry of Wordsworth, Coleridge, Shelley and Byron, and its relation to the French Revolution. 8—The reaction against the revolutionary spirit, first distinctly indicated in Poems chiefly lyrical, by Alfred Tennyson 1830; the poetry of Tennyson, the Brownings, Rossetti, and Matthew Arnold, and that of their several disciples.

It is made a leading purpose in these lectures to present the literature, in its essential character, rather than in its historical, through the latter receives attention, but not such as to set the minds of students especially in that direction. It is considered all important that students should first attain to a sympathetic appreciation of what is essential and intrinsic, before the adventitious features of literature—features due to time and place—be considered.

*Seminary work*—The literary seminary is confined to prose authors. Certain classical works are proposed, by the instructor, as subjects of study, from which each student makes a selection. This he studies carefully, first, in its essential, intrinsic character, and, secondly, in its accidental and historical character, and afterwards embodies the result of his studies in a paper, which is read in the seminary, and discussed by the several members, each member having been required to read, in advance, the work in question.

#### 5—JOURNALISM

In the belief that certain parts of newspaper work can be taught in the class-room, both by lectures and by actual experiments in reporting, preparing copy for the printer, editing copy and the like; and that such instruction by a journalist of experience may be made of decided advantage to students who desire to enter the profession of journalism, a course is offered in the beginnings of newspaper work.

After a few lectures on How newspapers are made ; Characteristics of leading newspapers of the United States ; Chances of success in journalism, and kindred topics, the class is organized as though it were the city staff of a large newspaper, with the professor as editor in charge. It is thought that after a year in the course, the average student will be prepared to begin actual newspaper work, far in advance of the new reporter who has not had such a course.

### Philosophy

The study of philosophy begins in the sophomore year, with a prescribed course of three hours a week in physiology, psychology, and logic, throughout the year. Thereafter the work is altogether elective. In the junior year the courses offered aggregate from three to eight hours a week. For seniors and graduates who have completed these courses, there is a course in the philosophy of Kant, a course on post-Kantian German philosophy, and a course on the philosophy of to-day.

The department is manned by a professor and an instructor. It has a seminary-room, reserved for the exclusive use of advanced students, who are engaged in investigation and writing. The library contains complete sets of the leading American, English, French and German philosophical periodicals.

### The science and art of teaching

The lectures of the professor of teaching are given in two courses, each of which continues a year: 1—a course of three hours a week on the general theory of education, the art of instruction with its application to various branches, and the organization, management, and administration of schools; and 2—a course of two hours a week on the history of education, with a discussion of the views of eminent writers on education.

Arrangements have also been made in several departments of the University, by special classes and by seminaries, to give extended instruction to those who intend to teach, in the best methods of presenting the branches of study to which these departments are devoted.

Certificates of scholarly fitness to teach will, upon application on or before June 1, be given to such graduates as have successfully pursued the course of the professor of teaching, together with the course on the history of education, and have besides



attained marked proficiency in at least five hours of advanced work for two years, in each subject for which the teacher's certificate is given, in such courses as offer five or more hours of such work.

### History and political science

Instruction in history and political science has three distinct purposes in view. The first is to furnish the general information that is necessary for intelligent citizenship; the second to give such training as will be valuable to students intending to go into the profession of the law, into journalism, into the civil service, or into active political life; and the third to provide for such special and advanced training as will qualify students for higher degrees, and for the subsequent teaching of history and political science as a profession. The first of these ends is sought by means of text-books, examinations, and lectures; the second and third by means of lectures, examinations, and the careful investigation of special subjects carried on in the seminaries of history and political science.

In general history the courses offer facilities for a comprehensive and somewhat careful study of the whole period from the beginning of Greek civilization to the present time. Seminaries in general history, as well as in the history of England and of America, are organized for the prosecution of advanced work.

In political economy provision is made for a general, an advanced, and a seminary course. After the present year additional courses on the historical development of different economic and financial systems may be expected.

No course of study in history and political science is laid down; but the various courses offered in the list of courses of instruction are open to election by all candidates for the degrees of bachelor of arts, bachelor of philosophy, bachelor of letters, or bachelor of science. In the junior and senior years, as nearly all studies are purely elective, there is ample opportunity for selecting the work that may be desired.

Graduate studies may be carried on with advantage during two years after the baccalaureate degree is taken. The general seminary-room contains some 3,000 volumes of works selected with special reference to the needs of advanced students of history and political science, and this room is open to such students from nine o'clock in the morning to the same hour at night. The alcoves of the general library, which is especially rich in historical literature,



are also freely accessible to this class of students, whenever they are carrying on investigations in special subjects. The White library of history, containing about 30,000 volumes and 10,000 pamphlets, though not yet placed in one of the university buildings, is, for the most part, upon the university grounds, and, through the carefully prepared catalogue kept in the university library, is made available to all advanced students.

The number of professors and other teachers devoted to this work, the character and range of the instruction given, as well as the facilities offered by the seminaries and libraries, afford favorable opportunities for the prosecution of a thorough and comprehensive course of historical training.

### Mathematics and astronomy

The instruction offered by this department is directed toward three ends: 1—To aid in developing certain powers and habits needed by every true student and good citizen: namely, of sustained, exact, candid, independent reasoning, even when the subject matter becomes general or abstract; of imagination, to grasp as a whole a complex geometric or other concept, or an extended scheme of thought; of applying theory to practical problems; and of precision and clearness in stating one's own convictions and the grounds of them. 2—To present the fundamental relations of space, number and sequence, and the structure of the system of worlds, in which we live. 3—To meet the special needs of students doing the higher technical and scientific work, and of those intending to be teachers and investigators.

It is hoped that the courses offered give enough in each of the chief branches of pure mathematics, and in some of the applications, to exhibit the fundamental ideas and characteristics of each branch, and to meet its fundamental difficulties; so that the student's further studies may not require a teacher. This is the more desirable, as the educational uses of these various lines of study differ somewhat in kind; but it sometimes requires that, to save time, problems collateral to those examined be deferred until the whole shall come to be reviewed, or until later studies, at the university or elsewhere, shall call for them or throw new light upon them.

In presenting the different topics, the endeavor is to cultivate the powers of insight, judgment, and origination, rather than to

rely very much upon memory. Attention is given to the criticism and choice of methods, and to the detection of their motives; and the methods most naturally suggested by general considerations are oftenest preferred. Students are encouraged to think both with and without the aid of symbolic language; to give concrete interpretations of important steps as well as of results; and, on the other hand, to see how far the symbols with their laws of combination can be separated from the particular subject matters, and to make free use of symbolic methods.

#### PURE MATHEMATICS

The courses prescribed, in whole or in part, for all candidates for baccalaureate degree comprise a year of solid and projective geometry, algebra, and trigonometry, and a year of analytic geometry and calculus; making up about the usual college curriculum of pure mathematics. Among the books used in the elective work are Burnside and Panton's *Theory of equations*, Todhunter's *Plane trigonometry*, Salmon's *Conic sections*, and selections from his *Higher plane curves* and *Analytic geometry of three dimensions*, Williamson's *Calculus*, and (for reference) Bertrand's *Calcul*.

Related to the above work from Salmon are two other courses, of three hours each, viz.: (1) In synthetic geometry, which gives the theories of transversals, of reciprocal polars, and of projection. (2) In quantics, including the theories of elimination, of canonical forms, and of such relations among functions or values as persist when variables are linearly transformed or the corresponding geometric figures are deformed as by perspective.

Two principal lines of further calculus study are offered, viz.: differential equations, and the theory of functions. Perhaps the first of these is specially important as an introduction to the higher physical applications of calculus; and the second as leading up to some of the largest of modern analytical concepts. The work at first is based on the treatises of Forsyth, and of Briot and Bouquet, respectively.

For the sake of the practical applications, there is instruction in finite differences or in spheric harmonics, usually in alternate years. The elements of vector analysis, or of non-Euclidean and hyper-geometry, or of probabilities and least squares with socio-

logical applications, including some recent work of Galton, are also usually taught if desired. In either of these subjects, the lectures are two per week.

The theory of numbers is taught in alternate years with molecular dynamics. It is based on Dedekind's Dirichlet's Zahlen-theorie, but gives a new theory of determinately combining ideals.

#### ASTRONOMY AND MECHANICS

There is yearly a course in descriptive and physical astronomy; and in alternate years one in celestial mechanics. The first course considers the phenomena of the heavenly bodies and their probable conditions and histories; the class investigating for themselves various questions bearing upon these points. The second course deals mainly with the figures of the planets, the tides, the elliptic motion and perturbations; the latter being treated geometrically as well as by the usual analytic method. Neither course takes up practical astronomy, which is taught by the department of civil engineering.

There is also a course in rational statics, and another in rational dynamics; and students are strongly advised to take these or their equivalents before commencing celestial mechanics. They are based on the treatises of Minchin and of Williamson.

#### SEMINARY WORK, ESSAYS, FACILITIES

An inquiry into the powers employed and the objects to be sought in the study of mathematics, and into the best ways of securing those objects in teaching, is conducted by essays and discussions in a weekly seminary.

Besides the theses for graduation, provision is made for the writing and criticism of mathematical essays, in order to cultivate a neat and clear style of mathematical writing, and as far as may be, to stimulate originality.

In preparing essays and theses, students are encouraged to follow up special inquiries by aid of the university library, which now contains some 5,000 volumes on mathematics and the allied sciences, including many of the most important mathematical journals, and transactions of many scientific societies. A collection of models is also begun, which will be very useful in the study of surfaces, of functions, and of hyper-geometry.



## Physics

### LECTURE COURSES IN ELEMENTARY PHYSICS

The instruction in the elements of physics is by means of lectures given twice a week throughout the year. In these lectures the general laws of mechanics and heat, electricity and magnetism, and acoustics and optics, are presented. The very large collection of lecture-room apparatus possessed by the department, makes it possible to give experimental demonstrations of all important phenomena. The course of lectures is supplemented by weekly recitations, for which purpose the class is divided into sections of about 20 members each.

### COURSES OF LABORATORY INSTRUCTION

The first year of laboratory work is devoted to the experimental verification of physical formulæ, to practice in the use of instruments of precision and to the attainment of some knowledge of the simpler methods of physical manipulation.

In mechanics, the student is taught the proper use of the microscope and of various forms of the micrometer, cathetometer, dividing engine, comparator, analytical balance, and chronography; and of other instruments for the measurement of length, mass, and time. In heat the course includes methods of testing thermometers, the use of the calorimeter and thermopile, and practice determinations, by various methods, of melting and boiling points, of specific heat and the heat of fusion and vaporization. In optics the elementary laboratory instruction embraces the use of the spectroscope and spectrometer, the determination of wave-lengths, the measurement of lenses and prisms, and of indices of refraction; together with a variety of other experiments calculated to familiarize the student with the fundamental principles of the subject. In electricity the work consists of the adjustment and calibration of galvanometers, of the verification of the principles upon which the measurements of current, electromotive force and resistance are based, the use of the electrometer, and the performance of such other experiments as offer the best preparation for advanced work in electricity. In magnetism practice determinations are made of the magnetic dip and of the horizontal intensity and variations in the direction and intensity of the earth's magnetism; and the student makes a preliminary study of the methods of measuring the magnetic field.



Advanced students make a more extended study of various physical constants. They learn the use of standard instruments, make electrical and magnetic determinations in absolute measure, test the efficiency and determine the characteristics of dynamo machines.

## Chemistry

### 1 — DESCRIPTIVE AND THEORETIC CHEMISTRY

To students in the general courses, and others who can devote but little time to the study of chemistry, instruction is given by a course of lectures and recitations on the principles of the science and the general study of the chemistry of inorganic substance.

Students who propose to take up subsequently analytic and organic chemistry are given a distinct course of lectures and recitations, and in addition are required to perform in the laboratory an extended series of simple experiments illustrating the principles discussed in the lectures.

The instruction in theoretic chemistry is continued by lectures and recitations in chemical philosophy, and also, in connection with laboratory work, in organic and analytic chemistry.

### 2 — ANALYTIC CHEMISTRY

*Elementary qualitative analysis* — The course in elementary qualitative analysis occupies about two terms of from seven to ten hours a week of actual practice, the work in the laboratory being supplemented by lectures and recitations. It is the purpose of this class-room work to give the student some acquaintance with the chemical principles on which that work is based, so that he may carry it out more intelligently and successfully than if he blindly follows the directions in the text-books.

*Blow-pipe analysis and determinative mineralogy* — A course of instruction in qualitative blow-pipe analysis and determinative mineralogy is given during one term.

*Elementary quantitative analysis* — This course extends for all students through at least one term of 10 hours of actual practice, and comprises a small number of simple gravimetric and volumetric determinations, together with some required study of the chemistry of the operations involved.

*Agricultural chemistry* — Students in the course in agriculture have practice in the analysis of fertilizers and feeding materials, of foods, of dairy products, and of waters used for the household.

*Engineering chemistry*—The student in the course of mechanical engineering may, if he can give more time to chemical practice than is prescribed for his course, work on the analysis of iron and steel, and of other materials used in the mechanic arts.

*Medical chemistry*—Practice is given to students in the medical preparatory course in the analysis of urine, milk and drinking water, in the separation of mineral and vegetable poisons from animal matter, and their identification, and the assay of medicinal preparations.

*Pharmacal chemistry*—Students in the school of pharmacy will take practice in all the kinds of analysis mentioned in the preceding course, and also in the assay of the crude materials used in the manufacture of drugs and medicinal preparations.

*Sanitary chemistry*—The student of sanitary science takes practice in the examination of drinking water, of air, of illuminating oils, and the detection of injurious adulterations of foods and beverages, or the injurious qualities of other articles in common use.

*The full course in quantitative analysis in the wet way*—The student in the course in chemistry, besides taking all work above mentioned, is drilled also in the methods of analysis of ores, the useful metals in their commercial condition—especially iron and steel—of alloys, and of gaseous mixtures; in the use of the polariscope and spectroscope, so far as they can be profitably applied in chemical analysis, the analysis of technical products, the examination of articles of food and drink for adulterations of commercial as well as sanitary significance, etc.

To these students lectures are given on the recent literature of chemical analysis; and readings are held in German chemical journals, for the purpose of giving such a familiarity with technical German that the abundant and important literature of the subject in that language can be consulted with facility.

*Assaying*—In assaying students are required to determine the values of gold, silver, and other metals contained in ores, sufficient in number to make them familiar with the most approved methods in use in the West and in European mining regions. The assay of gold and silver bullion, as practiced in the national mints, forms a part of the course. The assay laboratory is equipped with every requisite for work in this branch.

## 3 — ORGANIC CHEMISTRY

The elements of organic chemistry are taught by a course of laboratory practice with frequent recitations, by which the student is trained not only to recognize, but also to prepare and purify, the typical members of most of the series of organic compounds. In this course the work is arranged in accordance with the well-known text-book of Professor Remsen. As soon as the necessary proficiency in manipulation and theoretical knowledge is attained, the student is given every encouragement to devote himself to original investigation, for which organic chemistry offers an especially promising field. A special laboratory of organic chemistry has recently been completed, and equipped with an unusually complete stock of materials and apparatus.

## 4 — APPLIED CHEMISTRY

This subject is taught by a course of lectures, continuing throughout the year, on the principles of chemical manufacture and the important chemical industries. The course is supplemented and continued by special work in the analytic and organic laboratories, by which the student is trained in the special determinations and operations of the particular industry to which he may intend to devote himself.

## 5 — METALLURGY

During the winter term of the junior year three lectures a week are devoted to metallurgy. These lectures are intended to give the students in the technical courses a general idea of fuels, ores, and the most important methods of extracting the metals which are especially used in construction, the metallurgy of iron naturally claiming the most attention.

## Natural history

This title embraces botany (including horticulture and arboriculture); geology (including paleontology and mineralogy); invertebrate zoology (including entomology); vertebrate zoology (including physiology and hygiene, human and comparative anatomy, histology and embryology). Veterinary science is presented under agriculture.

Collectively, the branches named above form a large part of the four year course, leading to the degree of bachelor of science



in natural history, which is specially adapted to those who intend to become teachers or investigators of natural history, or to pursue the study of medicine.

The university lays special stress on the desirability of thorough studies in natural history as a preliminary to the study of medicine. Accordingly, a special course known as the two year course preparatory to the study of medicine is provided for those who desire such preparatory work, but for some reason are unable to take the full course of four years.

Nearly all the branches in natural history are required in the course in agriculture. In all the general courses physiology is a prerequisite to psychology; course 1 in botany is required in the courses leading to the degrees of bachelor of letters and bachelor of science, and in the courses in architecture and civil engineering. In the two courses last named geology and mineralogy are also required.

The instruction in the branches named above is either general or special. The special courses consist largely, or in some cases wholly, of laboratory practice. The general courses are abundantly illustrated by specimens, diagrams and experiments, and include practical exercises of the class in sections. The natural history instruction, as a whole, is therefore eminently direct, objective and practical.

### College of agriculture

The distinctive work of the college of agriculture embraces instruction in general chemistry, in agricultural chemistry, in botany, in horticulture, in zoology, in entomology, in veterinary science, and in the various branches of theoretical and practical agriculture.

All students are required to work five hours each week for one year, under the direct supervision of the professor of agriculture, in the farm workshop, in the barns, or in the fields. Nearly as much time is spent in the fields and barns under the professor of veterinary science, botany, horticulture, geology, and entomology. Students receive no pay for this or any other educational work. The field-work supplements the lectures and recitations in such a way that the application and value of the principles taught may be thoroughly understood and remembered by the student.



## THE COMPLETE COURSE

Students in the four year course are presumed at the time of their admission to be fairly familiar with all of the rudimentary operations of the farm. If they are not they can acquire this knowledge and practice either at the university farm, or under the eye of some good farmer, during their first summer vacation.

Visits are made from time to time to the best farms and herds in New York and Canada, in order that the students may have opportunities for a wide range of study and comparison, and may come into direct contact and relations with the best class of farmers.

## SPECIAL COURSE

There is a large number of farmers' sons who would be willing to spend one or two years at the university pursuing studies in applied agriculture, of whom the four year course demands too much in the way of preparation, as well as of time and expense. To accommodate this class a special course has been provided, the only requirements of which are that students must possess a fair knowledge of English, and must select at least three-fourths of their studies in subjects pertaining to agriculture, as elsewhere prescribed. The student is able, even in one year, to attend the courses of lectures given by the professors of agriculture, veterinary science, agricultural chemistry, botany, entomology and horticulture; and he may thus gain a systematic and practical knowledge of those branches that will be of most service to him.

## Architecture

The instruction is given by means of lectures and practical exercises. Its object is not merely to develop the artistic powers of the student, but to lay that foundation of knowledge without which there can be no true art. Drawing is taught during the first two years, and afterwards thoroughly used and applied in mechanics, stereotomy, and designing.

Architectural mechanics occupies a part of each term for one year. The lectures are each supplemented by at least two hours of work on problems. In developing the subjects and in solving problems, analytic methods are used; but for practical use special attention is paid to the application of graphic statics.

The study of the history of architecture and the development of the various styles runs through five terms. The lectures are illus-

trated by photographs, engravings, drawings, casts and models, of which the supply for the use of the department is very large. A lantern of the most approved pattern for the purpose of throwing architectural views upon a screen before the class is in constant readiness for the use of the lecturer.

Proper attention is paid to acoustics, ventilation, heating, decoration, contracts and specifications. The whole ground of education in architecture—practical, scientific, historic and esthetic—is covered as completely as is practicable in a four year course.

### Civil engineering

The several courses of preparatory and professional studies have been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practitioners in civil engineering; so that our graduates, guided by their theoretical education and as much of engineering practice as can be taught in schools, may develop into useful investigators and constructors.

The aim of this department is mainly to make its pupils cultured and well balanced professional men, trained to meet the actual demands of American engineering science and practice, without losing sight of the necessity of fostering professional progress.

The prominent characteristic of the organization of this department is the care exercised in the choice of its officers of instruction. The advanced mathematics, which have a prominent place in all the courses; the graphics, field operations, economics of engineering, and investigations in the library and laboratories of the department are, with only two exceptions, in charge of a body of instructors who are specialists in their respective branches, and who join to a long training as teachers the professional experience derived from active service in charge of construction for periods ranging between nine and 25 years; they are thus competent to judge of the needs and best methods for promoting the usefulness of this school.

The work of the students in the undergraduate course is based on an extended course on the mechanics, and the graphics and economics of engineering. There are no elective studies in this course. The object aimed at is to give as thorough a preparation as possible for the general purposes of the profession in the following subjects: The survey, location, and construction of rail-

roads, canals, and water works; the construction of foundations in water and on land, and of superstructures and tunnels; the survey, improvements and defenses of coasts, rivers, harbors and lakes; the astronomical determination of geographical coordinates for geodetic purposes; the applications of mechanics, graphical statics, and descriptive geometry to the construction of the various kinds of right and oblique arches, bridges, roofs, trusses, suspension and cantilever bridges; the drainage of districts, sewerage of towns, and the reclaiming of lands; the design, construction, application and tests of wind and hydraulic motors; air, electrical, and heat engines, and pneumatic works; the preparation of plans and specifications, and the proper inspection, selection, and tests of the materials used in construction. An elementary course of lectures is given in engineering and mining economy, finance and jurisprudence. The latter subject deals only with the questions of easements and servitudes, as digested from Washburn, and to the ordinary principles of the laws of contracts and riparian rights.

The organization of this department is correlated with that of others through some of its departments of instruction, and with great mutual advantage. Thus, this department teaches descriptive geometry to all students in the courses in civil engineering, architecture, electrical and mechanical engineering; and this subject may be elected by students in some of the general and scientific courses, and by special students. The theory of the arch and stone cutting, with its corresponding laboratory work, is taken by students in architecture and civil engineering. Land surveying is obligatory for students in civil engineering, and may be elected by students in various other courses. The entire course in mechanics, hydraulics, and hydraulic motors, is taken by the civil engineering students; and the electrical and mechanical engineering students have the first three terms, or the mechanics of engineering of solids. The higher mathematical studies and the purely professional studies may be elected by any graduates having the necessary preparation.

#### Sibley college of mechanical engineering and the mechanic arts

This college was founded and endowed by the liberal gifts of the late Hon. Hiram Sibley, of Rochester, who, in the year 1870, gave about \$30,000 for the erection of a suitable building for the



department of mechanic arts. He also gave \$10,000 for increasing its equipment of tools, machines, etc., and afterward made a further gift of \$50,000 for the endowment of the Sibley professorship of practical mechanics and machine construction. During the years 1883 to 1887 he gave more than \$75,000 for the purchase of models, the extension of the Sibley College buildings, and the building and equipping of a complete set of work-shops. The total amount thus presented to Cornell University is nearly \$150,000.

Sibley College is the school of mechanical engineering and of mechanic arts of Cornell University. The college is divided into four principal departments: that of mechanical engineering, including a laboratory, in which experimental work and investigations are conducted; a department of electrical engineering; a department of mechanic arts, or shopwork; and a department of drawing and machine design. The first named is presided over by the director, who is also the professor of mechanical engineering.

#### REGULAR COURSES

Sibley College, founded as a college of mechanic arts, is intended by the trustees of the university to be made not only a school of arts and trades, but a college of mechanical engineering also, in which schools of the mechanic arts and of the various branches of mechanical engineering shall be developed, as rapidly and extensively as the means placed at the disposal of the trustees of the university, and a demand for advanced and complete courses of instruction, shall allow.

#### 1 — DEPARTMENT OF MECHANICAL ENGINEERING

The department of mechanical engineering is divided into two principal sections: that of theoretical engineering and that of experimental engineering, or the mechanical laboratory.

1 *Section of theoretical engineering* — The lecture-room course of instruction consists of the study, by text-book and lecture, of the materials used in mechanical engineering; the valuable qualities of these materials being exhibited in the mechanical laboratory by the use of the various kinds of testing machines, as well as by examination of specimens of all the most familiar grades, of which samples are seen in the cases of the museums and lecture-rooms. This course of study is followed, or accompanied,



by instruction in the science of pure mechanism or kinematics. This study is conducted largely in the drawing-rooms, where the successive positions of moving parts can be laid down on paper. It is illustrated, in some directions, by the set of kinematic models known as the Reuleaux models, a complete collection of which is found in the museums of Sibley College.

The study of machine design succeeds that of pure mechanism, just described. This study also is largely conducted in the drawing-rooms, and is directed by an instructor familiar, practically as well as theoretically, with the designing and proportioning of machinery.

The closing work of the course consists of the study, by textbook and lecture, of the theory of the steam engine and other motors.

*2 Section of experimental engineering, or mechanical laboratory instruction*—The work in this department will be conducted by an instructor familiar with its apparatus and with the best methods of work, and who will plan a systematic course of instruction intended to give the student not only skill in the use of apparatus of exact measurement, but to teach him also the best methods of research, and to give him a good idea of the most effective methods of planning and of prosecuting investigations, with a view to securing fruitfulness of result with minimum expenditure of time and money.

## 2—DEPARTMENT OF ELECTRICAL ENGINEERING

The student at the end of the third year may, if he chooses, substitute the special work in electrical engineering for the engineering of the regular course. Thus, it will be seen, the two courses are identical during the first three years, comprising drawing, mathematics, mechanics, mechanism, machine design, the elementary study of physics, and preliminary practice in the use of electrical and other physical instruments. The special work of the fourth year for electrical engineers comprises the study, under the direction of the professor of electrical engineering, of prime-movers, the theory and construction of electrical machinery, the study of the problems involved in the distribution of the electric light and the electrical transmission of power, besides practice in every variety of electrical measurement and testing, as applied to the erection and maintenance of electric

lighting and power plants and telephone and telegraph lines and cables, and to the purposes of investigation; while work in the department of physics is continued with special reference to the needs of the practical electrician.

Graduates in the course of electrical engineering are given a degree as in other regular courses, and a statement that the student has paid special attention to electrical work is introduced into his diploma.

Electricians unfamiliar with engineering may secure special work.

### 3 — DEPARTMENT OF MECHANIC ARTS, OR SHOPWORK

The aim of the instruction in this, the department of practical mechanics and machine construction, is to make the student, as far as time will permit, acquainted with the most approved methods of construction of machinery.

1 — *Section of woodworking and pattern-making* — This course begins with a series of exercises in woodworking, each of which is intended to give the student familiarity with a certain application of a certain tool; and the course of exercises, as a whole, is expected to enable the industrious, conscientious, and painstaking student easily and exactly to perform any ordinary operation familiar to the carpenter, the joiner, and the pattern-maker.

2 — *Section of forging, moulding and foundrywork* — These courses are expected not only to give the student a knowledge of the methods of the blacksmith and the moulder, but to teach him also how to use the tools, and to give him that manual skill in the handling of tools which will permit him to enter the machine shop, and there quickly to acquire familiarity and skill in the manipulation of the metals, and in the management of both hand and machine tools, as used in the working of such metals.

3 — *Section of ironworking* — The instruction in the machine shop, as in the foundry and the forge, is intended to be carried on in substantially the same manner as in the woodworking course, beginning by a series of graded exercises, which will give the student familiarity with the tools of the craft and with the operation for the performance of which they are particularly designed, and concluding by practice in the construction of parts of machinery, and, time permitting, in the building of complete machines which may have a market value.

## 4—DEPARTMENT OF INDUSTRIAL DRAWING AND ART

1—*Section of free hand drawing and art*—Instruction in this department begins with free hand drawing, which is taught by means of lectures and general exercises from the blackboard, from flat copies, and from models. The work embraces a thorough training of the hand and eye in outline drawing, elementary perspective, and model and object drawing, drawing from casts, and sketching from nature.

2—*Section of mechanical drawing*—The course of instruction in mechanical drawing is progressive, from machine sketching and geometrical drawing to designing of machinery and making complete working drawings.

The course begins with free hand drawing, as above; and in the latter part of this work considerable time is expected to be given to the sketching of parts of machines and of trains of mechanism, and later, working machines. The use of drawing instruments is next taught, and, after the student has acquired some knowledge of descriptive geometry and the allied branches, the methods of work in the drawing-rooms of workshops and manufacturing establishments are learned. Line-drawing, tracing, and blue printing, the conventional colors, geometrical construction, projections, and other important details of the draughtsman's work, are practiced until the student has acquired proficiency.

The advanced instruction given the upper classes includes the tracing of curves and cams, the study of kinematics on the drawing-boards, tracing the motions of detail-mechanism, and the kinematic relations of connected parts. The course concludes, when time allows, by the designing of complete machines, as of the steam engine or other motor, or of some important special type of machine.

## INDUSTRIAL ART

A four year course of instruction in industrial art is arranged for students having a talent for such work, and desiring to devote their whole time to this subject. No degree is conferred, but a certificate of proficiency may be given at the end of the course. This course is given additional interest by occasional general and public lectures on the history of art and the work of great artists.



### Graduate studies

An inspection of the courses of study will show that the amount of instruction offered is greatly in excess of the amount which any person can avail himself of while an undergraduate student. Though all of the courses are open to undergraduates who have prepared themselves by taking the necessary preliminary electives, a large number of courses are especially adapted to the wants of graduate students. No sharp line of demarcation, therefore, separates the two classes. Graduates and advanced undergraduates are taught together; but in all cases the necessary prerequisite work must have been taken. In nearly or quite every branch of study, the advanced courses of lectures and the seminaries and laboratories afford abundant opportunities for carrying on profitable work of a high grade during two or three years after the baccalaureate degree has been taken. Students are admitted to graduate study after having taken a baccalaureate degree in this university, or on presenting a diploma giving evidence that an equivalent degree has been taken elsewhere. Courses appropriate for graduate students and leading to advanced degrees are provided in the following departments: Ancient Classical languages and literatures, modern European languages and literatures, English literature, comparative philology, history and political science, philosophy, mathematics, chemistry and physics, natural history, the science and art of teaching, civil engineering, mechanical engineering and agriculture.

Among the special advantages offered to graduate students in this university may be mentioned the following:

1—The greater part of such work is carried on in laboratories and seminaries, in which the student, with the aid and under the intimate personal guidance and direction of the professor, is encouraged in the prosecution of original investigation of an advanced nature. In all the graduate work the aim is to surround the student with an atmosphere of earnest devotion to the cause of the advancement of knowledge and to excite a true scholarly spirit.

2—Graduate students who are not candidates for a degree, as well as those who are, are required to work under the general direction of a committee of the faculty, appointed for the special purpose of supervising and directing their work. All graduate



students are at liberty to attend any of the exercises of the university; but under the guidance of the appropriate committee every such student must take an amount of work not less than the minimum required of undergraduates during the senior year.

3—Graduate students have access to the alcoves of the library, as well as to the special collections in the seminary rooms, and thus have exceptional opportunities for prosecuting advanced work.

4—Eight fellowships, with stipends of 400 dollars each, are annually given to such graduate students as may be selected by the faculty for the superiority of their scholarship.

5—Tuition is free to such graduate students as, having been duly admitted by the proper authorities as candidates for a second degree, are regularly pursuing the courses of study leading to such degree in accordance with the prescribed requirements of the proper faculty.

## COURSES OFFERED IN EACH DEPARTMENT

### Comparative philology

1 — General introduction to the science of language.

The chief principles of the life and growth of language; outlines of the science of phonetics; history of the science of comparative philology; historical and ethnological results of the science; classifications of languages; salient characteristics of the various branches of the Indo-European family of languages; methods of investigation.

2 — Comparative grammar of the Indo-European languages; fall term, the history of sounds in the various branches of the Indo-European family; winter term, Greek grammar from the comparative point of view, chiefly with reference to the history of sounds and inflections; spring term, Latin grammar.

3 — Sanskrit, The first 25 lessons of Perry's Sanskrit primer; the essentials of the grammar, given in the form of lectures; reading of selections from Lanman's Reader.

4—Advanced Sanskrit, Reading of selections from the Rig-Veda; grammatical discussions; lectures upon the private and religious antiquities of the ancient Hindoos.

5 — Gothic, Braune's Gothic grammar; reading of selections; lectures on the relations of the Germanic languages to the Indo-European parent-speech.

6 — Philological seminary; see under Greek, courses 8 and 9.

## Greek

A — Elementary Greek ; The essentials of the grammar ; Simple exercises in composition ; Reading selections from the *Cyropædia*, *Anabasis* and *Memorabilia* of Xenophon.

1 — Freshman course ; First section ; Reading of selected orations of Lysias, accompanied by a careful review of the Attic inflections and syntax ; Six books of Homer's *Odyssey* ; Selections from Herodotus and Thucydides ; Greek compositions throughout the year.

Second section ; Reading of selected orations of Lysias ; Three books of Homer's *Odyssey* ; Selections from Herodotus ; Greek composition throughout the year.

2 — Sophomore course ; The *Philippics* of Demosthenes ; Plato's *Apology* of Socrates ; The *Antigone* of Sophocles and the *Alcestis* of Euripides ; The *Frogs* of Aristophanes ; Greek composition throughout the year ; Outline lectures upon the history of Greek literature.

3 — The Greek Drama ; One play each of Aeschylus and Sophocles, two plays of Euripides, and a comedy of Aristophanes ; Lectures upon the Greek theatre and drama.

4 — History and Oratory ; Thucydides, bks. 6 and 7 ; Andocides on the Mysteries ; Isocrates' *Panegyricus* ; Aeschines against Ctesiphon ; Demosthenes on the Crown ; Lectures on the history of Athens during the Peloponnesian war, and on the characteristics of Attic oratory.

5 — Greek Philosophy ; The *Phædo* and *Republic* of Plato ; The *Nicomachean ethics* of Aristotle ; Lectures upon the history of Greek philosophy.

6 — Greek poetry ; *Anthologia Lyrica* (Bergk) ; Selections from Pindar ; Selections from Theocritus ; Lectures and recitations.

7 — The private, political and legal antiquities of the Greeks. The first two terms will be devoted to a study of the private life of the Greeks, with illustrations from ancient monuments and remains ; the third term will be given to a review of the political and legal institutions of Athens and Sparta.

See History and political science, course 2.

8 — New Testament Greek ; Reading of selected passages from the New Testament ; Lectures on the characteristics of Hellenistic Greek.

9 — Philological Seminary ; The Greek dialects, particularly the Lesbian, Doric and North Greek, studied from the inscriptions ; Introduction to the critical study of Homer ; Preparation and discussion of papers by members of the seminary.

10 — Philological Seminary ; The Attic dialect, studied from the inscriptions ; Phases of the Attic dialect in literary use ; Preparation and discussion of papers by members of the seminary.

11 — Greek Grammar ; Historical treatment in lectures ; see under comparative philology, course 2.

For lectures on Greek art, see under Latin, course 10.

For Greek history, see under history and political science, course 1.

### Latin

Courses 1 and 2 cover the required work for freshmen in arts and philosophy. Courses 3 and 4 the required work for sophomores in those courses.

1 — Rapid reading of easy Latin (Nepos) ; The *De senectute* of Cicero ; Livy ; Translation at sight ; The writing of Latin.

2 — Rapid reading of easy Latin (Nepos) ; The *De senectute* of Cicero ; Livy ; Translation at hearing ; The writing of Latin.

The purpose of this course, which is arranged for students who have given evidence at the entrance examinations of more than average knowledge and ability, is to prepare them to read ordinary Latin with ease and speed. A methodical study of the structure of the Latin sentence, in connection with syntax, is made in the class-room, and a written exercise in translating at first hearing, is given weekly by the professor in charge of the department.

3 — The *Germania* of Tacitus ; The *Phormio* of Terence ; Translation at sight ; Horace — Selections from the *Epodes*, *Satires*, *Odes*, and *Epistles* ; Collateral reading upon the history of Rome during the period covered by the life of Horace.

Open to students who have completed course 1.

4 — The *Germania* of Tacitus ; The *Phormio* of Terence ; Horace — Selections from the *Epodes*, *Satires*, *Odes*, and *Epistles* ; Translation at sight ; Collateral reading upon the history of Rome during the life of Horace ; History of Roman literature.

Open to students who have completed course 2.

5 — Practice in speaking and writing Latin.

The course is open to students who have completed course 1 or course 2, and is specially recommended to those who may be planning to elect Latin later.



6 — Selections from the republican literature — Plautus, Lucretius, Catullus. Cruttwell's and Teuffel's Histories of Roman literature.

Courses 6 and 7 are given in alternate years.

7 — The literature and history of the early empire (to 180 A. D.) ; Pliny the Younger, with brief selections from Martial, Aulus Gellius and Fronto ; Juvenal, with brief selections from Persius ; Selections from Tacitus, with brief selections from Valerius Maximus, Velleius Paterculus, and Suetonius ; Cruttwell's and Teuffel's histories of Roman literature ; Capes's Early empire and age of the Antonines, and Merivale's History of the Romans.

Courses 6 and 7 are given in alternate years.

8 — Early Latin : Allen's Remnants of early Latin, and inscriptions, with special reference to syntax. •

For lectures on Latin grammar see under comparative philology, course 2.

9 — Teacher's seminary ; Introductory lectures on the relation of preparatory and university work in Latin, and on the order of arrangement and methods of work in the former. Brief survey of Latin syntax ; Practical illustrative work in Cæsar and Cicero, conducted by the instructor and by members of the seminary.

10 — The private life of the Romans ; A systematic treatment, with illustration from the remains of ancient art, and in particular from the results of excavations in Pompeii, Herculaneum and Rome

Greek and Roman art ; pottery, coins, engraved gems, painting, sculpture ; An introductory course, illustrated with lantern views, photographs, casts, etc. ; Lectures.

See under history and political science, course 3 ; open to students of the sophomore, junior and senior years.

Courses 8 and 9 alternate with course 10.

11 — Latin seminary ; Unsettled problems in Latin syntax : Investigations ; Lectures, and preparation of papers by members of the seminary.

Open to graduates, and, with the consent of the instructor, to undergraduates of special attainments, who desire the course in addition to the other elective courses of the year.

For Roman history, see under history and political science, course 1.



### Germanic languages

1 — Whitney's German grammar ; Translation from English into German ; Reading easy stories, poems and novels ; Committing short poems to memory.

2 — Minna von Barnhelm ; Wilhelm Tell ; Goethe's Prosa ; Advanced grammar ; Writing selected stories from dictation ; German composition ; Translation at sight ; Exercises in the etymology and synonyms of German words.

3 — Lectures on the history of German literature from the period of the Reformation to Goethe's death ; This course will be accompanied by views illustrating the literary history, art and social life of the time.

4 — The lyric poems of Goethe, Schiller, and Heine.

5 — The classical period of German literature ; Nathan der Weise ; Select works of Goethe and Schiller ; Ballads of German history.

6 — Middle high German ; Das Nibelungenlied ; Der arme Heinrich ; Poems of Walther von der Vogelweide.

7 — Behaghel's Die Deutsche Sprache ; The principles of the German language ; German pronunciation, etymology, and synonyms ; This course is intended for advanced students and teachers ; All who elect it are advised to take also course 2 in comparative philology.

8 — Advanced German composition ; Selections from American classics, accompanied by essays.

### Romance languages

Course 1 covers the required freshman work ; course 2 the required sophomore work.

1 — Whitney's French grammar ; Super's French reader ; Tableaux de la Révolution Française ; Luquien's French prose of popular science (for students in the technical courses).

2 — Corneille's Horace ; Le Romantisme Français ; Hernani ; French composition, and lectures on literary history.

3 — La Société Française au dix septième siècle ; Molière's Les précieuses ridicules and Les femmes savantes.

4 — The novel of the Romantic school ; Hugo, Dumas, Balzac, Mérimée, Gautier and Sand.

5 — French philology and Old French literature ; Chanson de Roland, Aucassin et Nicolette, etc.

Course 5 is open only to students who have had courses 1, 2, and Latin.

6—Advanced French composition; Intended specially for teachers.

7—Italian reading; Dante's *Inferno*; Selections from Boccaccio and Petrarch.

8—Italian grammar and reading.

9—Spanish grammar and reading.

10—Methods and fields of study in the Romance literatures; Popular tales, ballads and drama; Lectures.

### English language and literature, rhetoric and oratory

1—Freshman rhetoric; Qualities of style; Diction; Figurative language; Recitations one hour per week; Essay writing.

2—Sophomore essays; Narrative and descriptive composition; Each essay read and criticised with its author by special appointment.

3—Junior themes—Each production read and criticised with its author by special appointment; Lectures and recitations on advanced rhetoric.

4—Journalism; Lectures on different phases of journalism; practical instruction in the beginning of newspaper work; reporting; treatment of the different classes of news; preparing copy for the printer; and much of the detail that is usually slowly picked up by the reporter in the newspaper office.

5—Elocution; Mandeville's *Elements* of reading and oratory; instruction in breathing, management of the voice and gesture; general delivery; declamation in class; public speaking.

6—Oratory; Orations, speeches, and addresses; Each production read and criticised with the author; Weekly public oratorical exercises; Designed for those who have had course 5 or its equivalent.

7—English prose literature; A particular study of the works of De Quincey, Macaulay, Carlyle, and Ruskin, with an historical review of English prose from the time of Mandeville; Lectures and recitations.

8—The history of the English language; Lectures and recitations dealing with the phenomena of English speech in its various phases, as the result of development out of precedent types; It outlines the characteristics of the language at the most important

stages of its history, discusses its relations to the Germanic dialects of the Continent, and investigates the sources of its vocabulary, and the laws of its growth in sound, form and syntax.

9 — Seminary in English literature; The direct study of English prose masterpieces; The subjects for 1889-90 will be taken chiefly from the English humorists, essayists and novelists; Open only to seniors and graduates, except with the consent of the professor.

10 — Anglo-Saxon; grammar and reading.

11 — English poetry of the 17th, 18th and 19th centuries; Lectures.

12 — English poetry of the 14th, 15th and 16th centuries; Lectures.

### Philosophy

No course in philosophy can be taken by freshmen. Course 1 is required of all sophomores, except those in the technical departments. The remaining courses are elective, but they are open only to juniors, seniors and graduates, who have completed course 1.

1 — Logic and psychology.

2 — Physiological psychology; An account of the structure and functions of the nervous system, including the functions of the brain; the psychology and pathology of speech and writing; the development of the organs of the special senses; the methods of psychical measurement; and the psychology of hallucination, hypnotism, insanity, and other abnormal mental states: the whole leading to a psycho-physical conception of the mind.

3 — History of philosophy; An outline of speculative systems, from the rise of reflection among the Greeks down to our own day, in their relation to the development of the sciences and the progress of civilization; Lectures, with discussions and occasional essays.

Course 3 is open to all who have taken course 1.

4 — Ethics; The contents of the moral consciousness of men, savage and barbarous as well as civilized; the philosophical interpretation and implication of these facts in the light of a historico-critical survey of previous ethical theories, Greek, Roman, Christian, and modern (especially the evolutionary); and the application of the principles thus established to the regulation of life — individual, family, and social — including an examination of current questions in practical ethics; Lectures, discussions and essays.

Course 4 and course 3 are given in alternate years.



5— Ethics ; Aristotle's ethics (in English) ; Sidgwick's Methods of ethics ; Examinations and discussions.

Course 5 is open to all who take or have taken course 3 or course 4.

6— Epistemology ; A critical study of Hume's Enquiry concerning human understanding, and Kant's Critique of pure reason, with introductory lectures on Locke and Berkeley.

Course 6 is open to all who have taken course 3.

7 Ethics ; A detailed study of the ethical works of Kant ; Essays and discussions.

Course 7 is open to seniors and graduates who have taken courses 4 and 6, and to no others without special permission.

8— Metaphysics ; In 1889-90, Lotze's Metaphysics.

Course 8 is open to those who have completed the preceding courses.

9—The philosophy of to-day ; Abstracts by students of articles in the philosophical periodicals, and of new books and discussions thereon.

Course 9 is open only to students who have completed, or are completing all the preceding courses, and are making a specialty of philosophy.

10— The philosophy and history of religion ; A course of weekly lectures on the outlines of the philosophy of religion open to all students of the university, may be expected during the winter term.

### Science and art of teaching

These courses are open to juniors, seniors and graduates.

1— The science of education ; Philosophic basis ; aims ; methods ; means ; School instruction : application of methods to various branches ; recitations ; art of questioning and examining ; illustration and exposition ; Organization and management of schools : classification ; courses of study ; supervision ; school buildings and appliances ; school hygiene ; school economy, etc. ; Lectures.

Weekly exercises in class instruction will be given during the last half of the year in course 1.

2— Seminary ; Discussion and essays on educational topics, and reports on visits to schools.

Course 2 is open only to students who have taken or are taking course 1.



3 History of education in various ages and countries; Comparative education; theories of writers on education; eminent educators, etc.; Lectures.

4 — Pedagogic seminary; Examination of Waitz's *Allgemeine pädagogik*.

Course 4 is intended only for students who have completed course 1, or its equivalent, and a good knowledge of German is indispensable.

### History and political science

1 — The history and civilization of Greece and Rome; Fall term, Greece; Winter and spring terms, Rome; Designed for freshmen and required of all candidates for the degrees of B. A. and Ph. B.

2 — Private, political, and legal antiquities of the ancient Greeks; The first two terms will be devoted to the study of the private life of the Greeks, assisted by lantern views, illustrative of ancient monuments; The third term will be given to a discussion of the political and legal institutions of Athens and Sparta. Courses 2 and 3 will be given in alternate years.

3 — Private life of the Romans; A systematic treatment, with illustrations by lantern views, photography, etc., from the remains of ancient art, and in particular from the results of excavations in Pompeii, Herculaneum, and Rome.

4 — The political and social history of Europe during the middle ages; Lectures and examinations; Designed for sophomores and juniors, and may be taken either before or after course 5. Required of sophomores in philosophy.

5 — The political and social history of Europe from the renaissance to the French revolution; Lectures and examinations.

6 — The political and social history of England from the Saxon invasion to the close of the Napoleonic wars; Lectures and examinations; Designed for sophomores and juniors.

7 — The political, social and constitutional History of Europe from the beginning of the French revolution of 1789 to the Franco-German War of 1870; Lectures and examinations. While the greater part of the instruction in this course will be given by Professor Burr, several lectures on special subjects connected with the course may be expected from ex-President White and from President Adams.

8 — Paleography and Diplomatics, (the reading of historical manuscripts and the interpretation of historical documents, especially those of the Middle Ages); A seminary for the critical study of the materials of medieval and modern history in their original form; The course will be progressive by centuries and based upon actual study of the manuscripts and fac-similes in the possession of the university; A knowledge of Latin is an indispensable prerequisite to this course.

9 — American history from the earliest discovery to the end of the war for independence; Lectures and recitations; Designed for sophomores and juniors, and open only to those who have taken, or are taking course 4 or course 6.

10 — American history from the end of the war for independence to the end of the war for the Union; Lectures and recitations; This course is designed for sophomores and juniors, and for those who have taken, or are taking course 4 or course 6.

11 — American historical seminary for juniors; The investigation of historical subjects by study of the sources; Designed for students taking course 9 or course 10.

12 — American constitutional history, and American constitutional law; Lectures and recitations; Designed for those who have had course 9, and also for seniors in the School of Law.

13 — American historical seminary for seniors and graduates; The original investigation of subjects in American constitutional history; Designed for advanced students, and open only to those who, on application, evince proper qualifications.

14 — History of Institutions; Lectures; Fall term, General principles of political organization; Winter term, Growth of the English constitution; Spring term, Methods of municipal administration.

15 — International Law and Diplomacy; Lectures; Designed for juniors and seniors.

16 — The Literature of political science; Lectures.

17 — Historic achievements in statesmanship; Lectures; This course will be given alternately with course 16.

18 — General seminary; The examination of obscure political and historical questions.

19 — The elements of political economy; Lectures and examinations; Fall term, economic theory; Winter term, money and banking; Spring term, history of economic thought.

20 — The principles of public finance and financial history of the United States ; Lectures and topical studies ; Fall term, state industries and public debts ; Winter term, principles of taxation ; Spring term, history of tariff legislation in the United States.

24 — General economic seminary ; For the study of difficult problems in applied economics ; Open to students who have taken political economy one year.

26 — Social science, including the history and management of charitable and penal institutions.

27 — Roman law ; Its growth ; its characteristic features ; its influence on modern legal systems, and its contributions to the principles of comparative jurisprudence ; Lectures and examinations.

### Mathematics and astronomy

#### 1 — PRESCRIBED WORK

1 — For students in arts and philosophy ; (a) Fall term, solid geometry ; (b) Winter term, algebra ; (c) Spring term, plane trigonometry.

2 — For students in science, in letters, in chemistry, and in agriculture ; (See also course 10, below.) (a) Fall term, solid geometry and conic sections ; (b) Winter term, algebra, including the theory of equations ; (c) Spring term, plane trigonometry.

3 — For students in architecture and in civil engineering ; (a) Fall term, algebra, including the theory of equations ; (b) Winter term, plane and spheric trigonometry ; (c) Spring term, analytic geometry.

4 — For students in Sibley College courses ; (a) Fall term, algebra ; (b) Winter term, algebra ; (c) Spring term, plane and spheric trigonometry.

6 — For students in architecture ; Fall term, differential and integral calculus.

7 — For students in civil engineering ; (a) Fall term, differential calculus ; (b) Winter term, integral calculus.

8 — For students in Sibley College courses ; (a) Fall term, analytic geometry ; (b) Winter term, differential calculus ; (c) Spring term, integral calculus.

#### 2 — ELECTIVE WORK

[For these courses hours will be arranged by the professors to suit the members of the class. Any course not desired at the beginning of the fall term by at least five students, properly prepared, may not be given.]



10—Additional freshman work in applied and pure mathematics.

11—Geometric, algebraic, and trigonometric problems, with applications; including something of probabilities and insurance, and of spheric astronomy.

12—Advanced work in algebra, including determinants and the theory of equations.

13—Advanced work in trigonometry.

[The equivalents of courses 8, 12 and 13 are necessary, and course 11 is useful, as a preparation for most of the courses that follow.]

14—Advanced work in analytic geometry of two and three dimensions, viz:— (a) First year, lines and surfaces of first and second orders (b) Second year, general theory of algebraic curves and surfaces.

15—Modern synthetic geometry, including projective geometry.

16—Descriptive and physical astronomy; (a) Descriptive astronomy, requiring but little mathematics; (b) Physical and mathematical astronomy, requiring the equivalents of courses 3 or 4 and 7 or 8, and of course 1 or 2 in physics.

19—Advanced work in differential and integral calculus; (a) In differential calculus; (b) In integral calculus.

20—Quantics, with applications to geometry; Requires courses 8, 12, 14 (a), and preferably also 11, 13, 19; May be simultaneous with 14 (b).

21—Differential equations; to follow course 19.

24—Spheric harmonics and the potential function.

26—Rational statics.

28—Molecular Dynamics; or, 29, Theory of number; [28 is based on Sir Wm. Thomson's Baltimore lectures, as printed from Mr Hathaway's notes; 29 is based on Delekind's Dirichlet's Zahlentheorie, but gives a new theory of determinately combining ideals.]

30—Quaternions and vector analysis.

31—Theory of probabilities and of distribution of errors, including some sociologic applications.

32—Mathematical optics, including wave theory and geometric optics.

33—Mathematical theory of heat and thermodynamics.

34—Mathematical theory of sound.

35—Mathematical theory of electricity and magnetism.



## Physics

1 — Mechanics and heat ; Electricity and magnetism ; Acoustics and optics.

Course 1 is intended to meet the needs of students in architecture, civil engineering, mechanical engineering, and electrical engineering ; This course requires a knowledge of plane trigonometry.

2 — (a) Mechanics (1 term), Electricity and magnetism (2 terms); [ (b) Heat (1 term), Sound and light (2 terms). ]

Course 2 is intended to meet the needs of students in the general courses. Parts (a) and (b) will be given in alternate years and either (a) or (b) will be accepted as the required work in Physics in the courses in science, letters, agriculture and chemistry and in the course preparatory to medicine. Students in the above courses will have an opportunity to complete the subject as elective work in the junior year.

Course 2 demands a knowledge of plane trigonometry.

3 — Physical experiments ; Theory and methods of physical measurements.

Course 3 includes laboratory experiments illustrating general laws in all branches of physics, and instruction in the adjustment and use of instruments of precision for measurements in mechanics, heat, light and electricity. It is open only to students who have passed satisfactorily in courses 1 or 2.

4 — Electrical measurements ; Tests of electrical instruments and determination of constant ; Theory and experimental study of dynamo machines, including tests of efficiency ; Electric lighting ; Photometric and electrical tests of electric lamps.

Course 4 is designed for seniors in electrical engineering but it is open to all students who have completed course 3.

5 — A shorter course in electrical measurements for students in mechanical engineering ; Three hours laboratory work.

Students taking course 5 are advised to attend also the lectures announced under course 4.

6 — Special laboratory practice in general physics for undergraduates who have completed course 3. This course is preparatory to graduate courses 18, 19 and 20. It is intended to meet the wants of those who expect to teach experimental physics.

7 — Thesis work in physics and applied electricity (during the Spring term).

9 — Practical photography, counting one hour a week, during the spring term.

Course 9 is open only to students who have the requisite knowledge of chemistry, and those wishing to take it must bring a certificate from the head of some department to the effect that it is needed in their course of study.

Courses 11 to 20 are open to graduate students, and to undergraduates of exceptional advancement.

11 — Dynamo-electric machinery; Lectures, supplemented by recitations upon Thomson's dynamo-electric machinery.

12 — Theory of heat.

14 — Physiological optics and the science of color; One lecture a week and laboratory practice.

15 — Kinematics and dynamics (based upon MacGregor's Kinematics and dynamics).

17 — Readings and discussions; Critical reading of the standard periodical literature relating to physics; Undergraduates taking elective work in physics, and seniors in electrical engineering, will be admitted to this class upon special application.

18 — Absolute measurements in electricity and magnetism; Laboratory practice in the determination of current, electromotive force, resistance, electric capacity and the magnetic elements in absolute measure.

19 — Thermometry and calorimetry; Laboratory practice, including the study of the thermometer as an instrument of precision, methods of measuring temperatures and thermal capacities, influence of temperature upon various physical constants.

20 — Advanced spectroscopy; Laboratory practice, devoted to the use of the spectrometer and spectrophotometer.

Other courses of laboratory instruction will be arranged to meet the individual needs of graduate students.

### Chemistry, metallurgy, and pharmacy

• 1 — Inorganic chemistry; Lectures; Fall and winter term.

2 — Introductory laboratory practice in inorganic chemistry. One afternoon per week, by appointment.

This course is required, in addition to course 1, for all students who propose to take up later the studies of qualitative and quantitative analysis.

3 — Agricultural chemistry; Lectures.

4 — Qualitative analysis ; Laboratory work.

Lectures and Recitations ; Once weekly for each member of the class, in sections, by appointment.

Course 4 is open only to those who have had course 2.

5 — Blow-pipe analysis ; Spring term.

Course 5 is open only to those who have had course 1.

6 — Quantitative analysis ; Laboratory work.

Course 6 is open only to those who have had course 4.

7 — Quantitative methods.

Course 7 is open only to students in course 6.

8 — Chemical philosophy.

Course 8 is open only to those who have had course 1. It is given in alternate years with course 9, and may be expected in 1890-91.

9 — Applied chemistry ; Lectures.

10 — German chemical reading.

Course 10 is open only to advanced students in course 6.

11 — Organic chemistry ; Lectures and recitations ; Laboratory practice, daily.

Open only to those who have had courses 1, 2 and 4.

11a — Special chapters in organic chemistry ; Lectures, one hour per week, by appointment.

Open to those who have had course 11.

12 — Chemical journals ; One hour per week ; Required of seniors in course in chemistry ; Professors and instructors of the department.

13 — Metallurgy ; Lectures ; Winter term.

14 — Assaying ; Laboratory work ; Spring term.

15 — Practical pharmacy ; Lectures.

16 — Practical pharmacy ; Laboratory ; Juniors.

17 — Practical pharmacy ; Laboratory ; Seniors.

18 — Materia medica.

19 — Pharmacognosy.

### Botany and arboriculture

1 — Botany ; Introductory and general course ; Spring term ; Lectures.

2 — Botany ; Introductory laboratory course ; Spring term ; Recitations from Gray's Lessons, first part of term ; laboratory work and excursions, latter part of term.



Course 2 is supplementary to course 1; both are required of all students before admission to subsequent courses.

3—Systematic and economic botany; Lectures; laboratory work by appointment. In the fall term taxonomy, with a study of the orders compositae and gramineae; Winter term, representative natural orders, and groups of economic plants; Spring term, field and laboratory work; a special study of the structure, affinity, distribution and economy of some one natural order.

4—Arboriculture; In the fall term, trees and their cultivation; forests and forest economy; elements of forestry; Winter term, landscape gardening; parks and ornamental grounds; care and management of the surroundings of suburban and rural houses; Spring term, a field study of trees and shrubs.

5—Pharmaceutical botany; Spring term; Laboratory and field study of indigenous medical plants.

Course 5 is specially arranged for students in pharmacy, and may be substituted for the third term of course 3.

6—Exotics; A study of the plants growing in the conservatories; their cultivation and propagation; construction and management of plant-houses; practical green house work; Subjects and hours arranged by appointment.

7—Histology of plants; Fall term; Lectures; Laboratory work by appointment.

8—Higher cryptogams; Fall term; 1—Mosses and Liverworts. 2—Ferns and other Vascular Cryptogamia. Lectures; Laboratory work by appointment.

1 and 2 are given on alternate years; 1 may be expected in 1889-90.

9—Fungi; Spring term; Lectures; Laboratory work by appointment.

Courses 1 and 2, or their equivalent, are required of a student before entering on 7 and 8; and course 7 before taking up 9.

Courses 7 and 8 may be pursued during the same term.

10—Special advanced laboratory work; investigations and theses; For graduate and advanced students; Phænogams and the physiology of plants; Cryptogams and the histology of plants.

### Entomology and general invertebrate zoology

1—Invertebrate zoology; General course; Fall term; Lectures. During the greater part of the term there will be only two lectures a week, and one practical exercise by the class in sections.



2—Invertebrate zoology ; Special laboratory course ; Fall and spring terms.

3—Entomology ; Lectures on the characteristics of the orders, sub-orders, and the more important families, with special reference to those of economic importance ; Spring term.

4—Entomology ; Laboratory work, insect anatomy, determination of species, and the study of the life history of insects ; Fall and spring terms.

#### SUMMER COURSE

5—Summer course in entomology and general invertebrate zoology ; Lectures ; field-work, laboratory work, daily.

The laboratory and field work is arranged with reference to the needs and attainments of each student. After completing an elementary course in either general zoology or entomology, the student may select some subject in systematic zoology, economic entomology, or insect anatomy for special investigation. It is planned to have the work of each student, as far as possible, an original investigation.

#### Physiology and vertebrate zoology

1—Physiology, through the year ; Thirty-one lectures, demonstrations and practicums.

2—Vertebrate zoology. Winter term. Twenty lectures ; ten practicums.

Course 2 must be preceded or accompanied by course 1.

3—Morphology of the brain ; Spring term ; Eighteen lectures, nine practicums.

Course 3 must be preceded by course 2 and preceded or accompanied by course 1.

4—Anatomical methods and gross anatomy ; Fall term ; Laboratory work, with a weekly recitation or lecture.

Course 4 must be preceded or accompanied by course 1 and freehand drawing.

5—Microscopical methods and histology ; Winter term ; Laboratory work, with a weekly lecture or recitation.

Course 5 is open only to students who have taken free hand drawing, and the first term of course 1. Course 4 is also desirable.

6—Methods and elements of embryology ; Spring term ; Laboratory work, with a weekly lecture or recitation.

Course 6 is open only to students who have taken courses 2, 4, 5, and the first two terms of course 1.

7—Human or comparative anatomy, or systematic vertebrate zoology; Laboratory work, daily throughout the year.

Course 7 is a continuation of either courses 1 and 2 or 2 and 4, and must be preceded by the courses of which it is a continuation.

8—Vertebrate histology; Laboratory work daily throughout the year.

Course 8 is open only to those who have taken courses 1, 4 and 5.

The laboratory work varies with the needs and purposes of the student, and the extent of his preparation. The preliminary work includes the study of the skeleton, the study and dissection of the muscles, viscera, vascular system, and the brain and nerves of the cat.

### Geology, paleontology, and mineralogy

1—Mineralogy and lithological geology; Fall term; Two hours required for engineers.

2—Geology, general course; Winter term; Lectures on dynamical and historical geology to follow course 1; Required for engineers.

3 Economic geology; Lectures on the geology of ores, ore deposits and valuable rock material; Spring term. (This course is intended to follow courses 1 and 2).

4—Historical paleontology; Lectures and conferences, illustrating the history of organisms; Spring term; This course is intended to follow courses 1 and 2.

5—Paleontology; Laboratory and field work and study of characteristics fossils, with conferences, throughout the year; Intended to follow courses 1 and 2.

6—Advanced mineralogy and petrography; Crystal measurement, optical properties of minerals and microscopic work on rocks; Lectures and conferences; Requires course 1 or an equivalent.

7—Geological laboratory; Original investigation by advanced students with excursions under the direction of the department.

8—Geology, special course; required for architects; Lectures and laboratory work.

9—Survey methods; Lectures and demonstrations on the methods of making, recording and interpreting geological observations; Spring term.

### Agriculture and horticulture

1—Applied agriculture; The preparation of soils; general management of stock; farm buildings; farm-yard manures; commercial fertilizers; Farm accounts; principles of stock-breeding; races and breeds; breeding; feeding and management of cattle; sheep husbandry. The horse; farm drainage; farm implements and machinery; grain, grasses and weeds; business customs, rights, and privileges; relations of employers and laborers. Lectures.

Dairy husbandry 10 lectures and practicums by Professor J. W. Robertson of Guelph, Canada.

Real estate; three lectures by Professor H. B. Hutchins of the law school. Personal property and contracts; three lectures by Professor F. W. Burdick of the law school.

2—Agriculture, field work; Inspection tours to points of technical interest throughout the state.

[For agricultural chemistry, see chemistry, course 3; for arboriculture, see botany, course 4; for economic entomology, see entomology, courses 3, 4 and 5.]

3—General horticulture; Including the science of horticulture, principles of pomology and vegetable gardening, and discussions of forcing and forcing-structures; Opportunities are offered for extra hours of practical work, and for investigation; Fall term, laboratory work once a week. This must be taken before the work in the winter and spring terms can be pursued. Winter and spring terms, lectures and other class work.

### Veterinary science

1—The anatomy, physiology and hygiene of farm animals; data for determining age; principles of breeding, of shoeing, etc. Zymotic, parasitic, dietetic and constitutional diseases of domestic animals; Veterinary sanitary science and police; prevention of animal plagues by legislative and individual action; General diseases of the different systems of organs in the domestic animals; Lectures; Clinical demonstrations as opportunity offers.

### Architecture

#### *Freshman*

1—Linear drawing and projection; Winter term; Lectures; Drawing, five hours per week.

*Sophomore*

- 2—Building materials and construction ; Winter term ; Lectures ; Drawing ; Spring term ; Lectures ; Drawing.
- 3—Shades, shadows and perspective ; Spring term ; Drawing.

*Junior*

- 5—History of architecture ; Fall term—Lectures ; Winter term—Lectures ; Spring term—Lectures, Drawing
- 6—Designing ; Fall term—Lectures, Drawing ; Winter and spring terms—Lectures, Drawing.
- 7—Decoration ; Spring term—Lectures.

*Senior*

- 8—History of architecture ; Fall term—Lectures ; Winter term—Lectures.
- 9—Designing ; Occasional lectures ; Drawing.
- 10—Acoustics, etc., Spring term.
- 11—Decoration ; Fall term ; Drawing.
- 12—Thesis ; Spring term.

**Civil engineering**

*Freshman*

- 1—Linear drawing ; Winter term ; Drawing.
- 2—Lettering ; Winter term ; Drawing.

*Sophomore*

- 3—Descriptive Geometry ; Recitations and original problems.
- 4—Pen topography ; Drawing.
- 5—Land surveying ; Lectures, recitations and field work.
- 6—Colored topography ; Drawing.

*Junior*

- 7—Mechanics of engineering ; Lectures and recitations.
- 8—Shades, shadows, perspective and tinting ; Lectures and drawing.
- 9—Technical reading ; Winter term ; Critical study of foreign technical literature, three hours per week ; French, Italian, Spanish, German.
- 10—Structural details ; Lectures and drawing.
- 11—Elementary designing ; Lectures.



12 — Railroad surveying, railway office practice, and railway economics ; Lectures, recitations, drawing, and field work.

13 — Bridge stresses ; Lectures and recitations.

2a. Round lettering ; Drawing.

14 — Topographical practice ; Two weeks field work in the C. U. surveys of Central New York, and one week office work.

### *Senior*

15 — Spheric astronomy ; Fall term ; Lectures and recitations ; Night observations, twice a week.

16 — Stereotomy, and theory of the arch ; Lectures and drawing.

17 — Civil engineering ; Lectures.

18 — Hydraulics — Lectures and recitations.

13a — Bridge designing ; Lectures and drawing.

19 — Higher geodesy ; Lectures and recitations.

20 — Theory of oblique arches, masonry designs, and stone cutting ; Lectures and designs.

21 — Hydraulic motors ; Lectures and recitations.

22 — Engineering economics ; Lectures.

23 — Hydrographic mapping and chart making ; Drawing.

24 — Theses ; The subject to be approved by the dean of the department.

14a — Geodetical practice ; Two weeks field work in the C. U. Surveys of Central New York, office work, one week.

25 — Engineering laboratory work throughout the year.

26 — Sanitary and municipal engineering ; Lectures.

28 — Hydraulic engineering ; Lectures.

### **Mechanical engineering and the mechanic arts**

1 — Kinematics and mechanism ; Juniors ; Recitations and lectures.

2 — Materials of construction ; Juniors ; Recitations and lectures.

3 — Machine design.

4 — Steam engines and other motors ; Thermodynamics, and the theory of steam and other heat engines ; Lectures.

5 — Applied theory of the steam and other engines ; Lectures ; Structure and operation.

6 — Steam generation ; Design, construction and operation of the steam boiler.

7—Shopwork (a) Freshman; Woodworking; use of tools; carpentry; joinery; pattern-making; turning. (b) Sophomores and juniors; Blacksmithing; use of tools; forging; welding; tool-dressing, etc. (c) Juniors and sophomore. Foundry work; moulding; casting; mixing metals; brasswork, etc. (d) Juniors and seniors; Machinist's work; use of hand and machine tools; working to form and to gauge; finishing; construction; assemblage; erection.

8—Free hand drawing.

9—Instrumental drawing; Required of freshman in mechanical and electrical engineering.

10—Mechanical drawing; Specials.

11—Junior designing and drawing as assigned.

12—Senior designing and drawing as assigned.

13—Mechanical laboratory; Steam engine; Lectures; Juniors; Standardization of apparatus and tests of boilers and prime movers. Fall and winter terms; experimental work in standardization and in tests of boilers and prime movers.

14—Mechanical laboratory; (Strength of materials;) Study of methods of testing materials, in course. Juniors, Fall term. Experimental work in the laboratory, strength of materials;

Advanced work and research, as assigned by the Director.

15—Essays and debates; Mechanical engineers' association; All classes.

16—Electrical engineering; Seniors, as assigned.

17—Advanced work in special courses and graduate work, as may be assigned.

18—Lectures on various professional subjects, by non-resident lecturers, as announced in the register, at times to be assigned and announced.

### Military science and tactics

1—Infantry drills; School of the soldier; School of the company; School of the battalion.

2—Artillery drill; School of the soldier dismounted; School of the battery dismounted for selected detachments.

3—Military signaling, for selected detachments.

Students in courses 2 and 3 are selected by the commandant from those reasonably proficient in course 1.

4—Military science; Lectures.

Any member of the cadet corps who has satisfactorily performed all the duties required for the first year, and who is qualified therefor, may be selected for the place of a commissioned officer, if needed. For the performance of his duties as a commissioned officer in the junior or senior year, he is entitled to a credit of 3 recitation hours a week for the fall and spring terms; and, at graduation, he may receive a certificate of military proficiency with his diploma, provided he has also completed the course in military science prescribed for the winter term of the senior year.

### Hygiene and physical culture

1—Hygiene and physical culture; Required of all freshmen; Lectures.

2—Physical examinations; Students of all classes by special appointment.

3—Special medical advice to indigent students

4—Gymnastic exercises; Asthenic class, consisting of men who in the judgment of the director, are imperatively in need of special physical development. Fall and spring terms. The work consists of class and squad work, special developing exercises, and exercises prescribed by the director for individual deformity or immaturity.

5—Gymnastic exercises; Winter term. Sophomores and freshmen; Special exercises for individuals during the forenoons at hours to be arranged.

6—Ladies' gymnastic exercise; All classes except seniors; Sage College gymnasium; throughout the year instruction is given in class exercises, with and without apparatus.

GENERAL COURSES

ARTS		PHILOSOPHY		LETTERS		SCIENCE	
Hours per week		Hours per week		Hours per week		Hours per week	
FRESHMAN YEAR							
3	Latin	3	Latin	3	Mathematics	5	Mathematics
3	Greek	3	German	3	French	3	French
3	Mathematics	3	French	5	German	5	German
3	English	3	Mathematics	2	Mathematics or ancient history	2	English
2	Greek history, one term	2	English	2	English	1	Hygiene
2	Roman history, two terms	1	Greek history, one term	1	Roman history, two terms	1	Military drill or physical training
1	Hygiene	2	Roman history, two terms	2	Hygiene		
2	Military drill or physical training	2	Hygiene		Military drill or physical training		
			Military drill or physical training				
SOPHOMORE YEAR							
3	Latin	3	Latin	3	French or German	3	French or German
3	Greek	3	French or German	1	English	1	English
3	German	3	History	3	Physics	3	Physics
1	English	1	English	3	Chemistry, two terms	3	Chemistry, two terms
1	Physiology	1	Physiology	3	Botany, one term	3	Botany, one term
1	Psychology and logic	1	Psychology and logic	1	Psychology	1	Psychology
2	Military drill or physical training	2	Military drill or physical training	2	Psychology and logic	2	Psychology and logic
2-5	Elective	2-5	Elective	2	Military drill or physical training	2	Military drill and physical training
				2-5	Elective	2-5	Elective
JUNIOR YEAR							
2	Themes	2	Themes	2	Themes	2	Themes
	Other work elective		Other work elective		Other work elective		Other work elective
SENIOR YEAR							
2	Themes, two terms	2	Themes, two terms	2	Themes, two terms	2	Themes, two terms
2	Military science, one term	2	Military science, one term	2	Military science, one term	2	Military science, one term
	Other work elective		Other work elective		Other work elective		Other work elective

Unless otherwise specified, each course extends through the year.



TECHNICAL COURSES  
AGRICULTURE

FRESHMAN YEAR		SOPHOMORE YEAR		JUNIOR YEAR		SENIOR YEAR	
Hours per week		Hours per week		Hours per week		Hours per week	
5	Mathematics	1	English	2	Themes Other studies elective within the range of agricultural studies	2	Theses, two terms Military science, one term Other studies elective within the range of agricultural studies
5	French or German	3	Physics				
2	English	3	Invertebrate zoology, first term				
3	Free hand drawing	3	Vertebrate zoology, second term				
1	Hygiene	3	Botany, third term				
2	Military drill or physical training	3	Physiology	2	Themes Other studies elective within the range of agricultural studies	2	Theses, two terms Military science, one term Other studies elective within the range of agricultural studies
		1	Psychology and logic				
		2	Laboratory work				
		2	Chemistry				
		3	Military drill				
		2	Elective				

## ARCHITECTURE

FRESHMAN YEAR		SOPHOMORE YEAR		JUNIOR YEAR		SENIOR YEAR	
Hours per week		Hours per week		Hours per week		Hours per week	
FALL TERM							
5	French or German	5	Calculus	5	Mechanics	3	Renaissance architecture
5	Algebra	3	Descriptive geometry	3	Ancient architecture	3	Stereotomy
2	Rhetoric	3	Mechanics of heat	5	Designing	3	Decoration
3	Free hand drawing	3	Chemistry	3	Water-color drawing	8	Designing
2	Linear drawing	2	Free hand drawing				
2	Physical training	2	Military drill				
WINTER TERM							
5	French or German	6	Construction	5	Mechanics	3	Modern architecture
5	Trigonometry	3	Descriptive geometry	5	Romanesque architecture	3	Stereotomy
2	Rhetoric	3	Electricity and magnetism	5	Designing	7	Designing
3	Free hand drawing	3	Chemistry	2	Structural details	2	Military science
2	Linear drawing	2	Physical training				
2	Physical training						
SPRING TERM							
5	French or German	3	Construction	5	Gothic architecture	3	Professional practice
5	Analytic geometry	3	Descriptive geometry	2	Decoration	2	Modelling
2	Rhetoric	3	Acoustics and optics	2	Photography	7	Designing
3	Botany	2	Blow-pipe analysis	8	Designing	4	Theses
3	Free hand drawing	3	Shades, shadows and perspective				
2	Military drill	3	Geology				
		2	Military drill				

## CIVIL ENGINEERING

FRESHMAN YEAR		SOPHOMORE YEAR		JUNIOR YEAR		SENIOR YEAR	
Hours per week		Hours per week		Hours per week		Hours per week	
FALL TERM							
5	French or German	5	Calculus	5	Mechanics of engineering	5	Hydraulics
2	Rhetoric	3	Descriptive geometry	3	Surveying	5	Spheric astronomy
5	Algebra	3	Chemistry	4	Shades, shadows and perspective	2	Practical astronomy
3	Free hand drawing	3	Mechanics and heat	3	Laboratory work	2	Bridge designing
1	Hygiene	2	Pentopography	3	Mineralogy	3	Stereotomy and theory of the arch
2	Military drill	2	Military drill	2			
WINTER TERM							
5	French or German	5	Calculus	5	Mechanics of engineering	3	Civil engineering
2	Rhetoric	3	Descriptive geometry	2	Railway office practice	2	Hydraulic motors
5	Trigonometry	3	Geology	2	Detail drawing	2	Sanitary engineering
2	Lettering	3	Electricity and magnetism	3	Technical foreign reading	5	Geodesy
2	Linear drawing	3	Chemistry	3	Laboratory work	3	Stereotomy of the oblique arch
2	Physical training	2	Physical training	2	Metallurgy	2	Stone cutting
						2	Military science
SPRING TERM							
5	French or German	5	Land surveying	4	Mechanics of engineering	2	Engineering economies
5	Analytic geometry	3	Acoustics and optics	2	Designs of structures	4	Hydraulic engineering
3	Botany	3	Descriptive geometry	4	Bridge stresses	3	Cantography
1	Lettering	1	Rhetoric	4	Railway economies	4	Thesis
1	Rhetoric	1	Blow pipe analysis	3	Practical work	3	Practical work
2	Military drill	2	Colored topography				
			Military drill				

## MECHANICAL ENGINEERING

FRESHMAN YEAR		SOPHOMORE YEAR		JUNIOR YEAR		SENIOR YEAR	
Hours per week		Hours per week		Hours per week		Hours per week	
FALL TERM							
5	French or German	5	Analytic geometry	5	Mechanics of engineering	5	Steam engine
5	Algebra	3	Descriptive geometry	5	Kinematics	4	Laboratory work
2	Rhetoric	3	Mechanics and heat	2	Designing	6	Designing
3	Free hand drawing	4	Chemistry	6	Laboratory work	3	Shopwork
2	Shopwork	3	Shopwork	3	Shopwork		
1	Hygiene	2	Military drill				
2	Military drill						
WINTER TERM							
5	French or German	5	Calculus	5	Mechanics of engineering	5	Steam engine
5	Trigonometry	3	Electricity and magnetism	8	Laboratory work	4	Laboratory work
2	Rhetoric	4	Chemistry	2	Designing and drawing	3	Machine design
3	Drawing and sketching	3	Descriptive geometry	3	Shopwork	3	Machinery
2	Shopwork	3	Shopwork			3	Shopwork
SPRING TERM							
5	French or German	5	Calculus	5	Mechanics of engineering	12	Thesis, designing, laboratory and shopwork
2	Theory of equations	3	Acoustics and optics	4	Laboratory work	6	Elective
3	Conic sections	3	Descriptive geometry	2	Designing and drawing		
3	Drawing	4	Laboratory work	5	Machine design		
2	Rhetoric	3	Shopwork	3	Shopwork		
2	Shopwork	2	Military drill				
2	Military drill						



## ELECTRICAL ENGINEERING

The first three years are identical with the preceding; the senior year is as follows

FALL TERM	WINTER TERM	SPRING TERM
Hours per week	Hours per week	Hours per week
5	5	5
5	5	12
2	2	2
2	2	
Physics, lectures and laboratory	Physics, lectures and laboratory	Physics, lectures and laboratory
Steam engine	Steam engine	Thesis and preparation
Mechanical laboratory	Mechanical laboratory	Elective
Electrical engineering	Electrical engineering	
Shopwork	Shopwork	

## CHEMISTRY

FRESHMAN YEAR	SOPHOMORE YEAR	JUNIOR YEAR	SENIOR YEAR
Hours per week	Hours per week	Hours per week	Hours per week
5	3	12	12
5 or 3	1	6	2
3 or 5	3		2
2	1	Chemistry	Chemistry
1	1	Elective	Thesis, two terms
1	2		Military science, one term
2	7		Elective
2	2		
Mathematics	German or chemistry		
German	English		
Chemistry	Physics		
English	Physiology		
Hygiene	Psychology and logic		
Military drill or physical training	Chemistry		
	Military drill or physical training		

## REQUIREMENTS FOR GRADUATION

All the courses leading to the degree of bachelor and to the corresponding degrees of civil engineer and mechanical engineer require four years for their completion ; and no student is allowed to graduate in less than four years of actual residence (except in case of admission to advanced standing) without special permission of the faculty ; which permission will not be granted until the applicant has been in the university at least one year ; nor will it be granted after the first term of the year in which he proposes to graduate.

Every student, in order to be recommended for a degree, must have passed satisfactorily in at least 180 hours of work, including all the required work of the course in which the degree is sought. In the case of students admitted from other colleges the amount of work must be equal to 15 hours a term for each term in the university.

A graduation thesis is required of every student. This thesis must represent some phase of the student's principal line of work during the later years of his course. The subject of the thesis must receive the approval of the professor in charge of the study to which it appertains, and with such approval must be left with the dean or registrar not later than noon of the second Friday of the second term. In order to be acceptable, the thesis must have the character of a scholarly dissertation on the subject chosen, or, in technical courses, usually, actual work in designing or research ; and if finally accepted by the faculty, it will entitle the writer to a credit of two hours a week for the second and third terms, or, in the technical courses, as specified elsewhere.

The degrees of bachelor of arts, bachelor of philosophy, bachelor of letters, bachelor of science, bachelor of science in agriculture, bachelor of science in architecture, bachelor of science in chemistry, and the corresponding degrees of civil engineer and mechanical engineer, are conferred after the satisfactory completion of the respective courses.

Candidates for advanced degrees must present themselves for examination in one major and two minor subjects, which must have been determined upon, with the approval of a committee of the faculty, as early as November 1 of the year in which the degree is expected to be given, if it be the master's degree, or of

the year preceding that in which the degree is expected to be given, if it be the doctor's degree. The subject of the thesis required must be announced to the faculty as early as December 1 of the year in which the degree is expected to be given, and the paper in its completed form must be presented as early as May 1.

In case of special distinction attained in the thesis and in the final examination by the candidate for the degree of master of arts or doctor of philosophy, the degree of merit may be indicated in the diploma by one of the terms *cum laude*, *magna cum laude*, *summa cum laude*.

In case of special distinction attained in the thesis and in the final examination by the candidate for the degree of master of science, master of civil or mechanical engineering, or doctor of science, the degree of merit may be indicated in the diploma by one of the terms *with distinction*, *with high distinction*, *with the highest distinction*.

Successful candidates for the degree of doctor must print the theses and deposit 25 copies in the library. Successful candidates for the degree of master must deposit one copy.

The final examination for these degrees, except in the technical courses, are to be in charge of a committee of not less than three members, and may be both oral and written.

The special requirements for these degrees will be as follows:

The degree of master of arts or master of science is conferred on those who have taken the corresponding baccalaureate degree here, or at some other college or university where the requirements for that degree are equal to those of this university, on the following conditions:

Candidates must spend at least one year at the university in pursuance of an accepted course of study.

The degree of master of science is conferred on graduates in philosophy on the same conditions as on graduates in science.

The degree of master of civil engineering, master of mechanical engineering, or master of science in agriculture is conferred on candidates who have received the corresponding first degree, upon presenting a satisfactory thesis and passing the required examination as above, (1) after one year of resident study, or (2) after two years of professional practice and study *in absentia*.

The degree of doctor of philosophy is conferred on graduates of this university, and of other universities and colleges whose



requirements for the baccalaureate degree are equal to those of this university, on the following conditions :

1 — In order to become a candidate the applicant must have pursued a course of study equal to that required for graduation in this university in the course of arts or philosophy. Graduates holding the degree of bachelor of science who shall pass an examination in Latin equivalent to that required for graduation in the course in philosophy may become candidates for the degree of doctor of philosophy.

2 — The candidate must spend at least two years at the university pursuing a course of study marked out by the faculty. In exceptional cases a year of graduate work in a university elsewhere may, by a special vote of the faculty, be accepted in lieu of a year's work in this university.

3 — He must present a thesis of such a character as shall display power of original and independent investigation, and must pass the requisite examinations.

The degree of doctor of science is conferred on graduates of this university, and of other universities and colleges whose requirements for the baccalaureate degree are equal to those of this university, on the following conditions :

1 — In order to become a candidate the applicant must have a knowledge of Latin and Greek at least equal to that required for graduation with the degree of bachelor of science in natural history ; a knowledge of French and German equal to that required for graduation in science ; a knowledge of mathematics, science, literature, and philosophy equal to that required for graduation in philosophy.

2 — The candidate must spend at least three years, two of them at this university, in the study of three approved subjects within the departments of chemistry and physics, mathematics and natural history.

3 — He must present a thesis of such a character as shall display power of original and independent investigation, and must pass the requisite examinations.

## BUILDINGS

Main building, Morrill hall, stone, built 1866, value \$70,111. Sage chapel, brick, built 1874, value \$30,000. Memorial chapel, brick, built 1882, value \$11,547. Sage college, dormitory for



women, brick, built 1874, value \$165,000. Cascadilla building, stone, built 1868, value \$37,010. White hall, class room building, stone, built 1868, value \$80,485. Lincoln hall, science building, stone and brick, built 1888, value \$72,603. Sibley college, art building, stone, built 1870, value \$60,313. McGraw hall, library and museum, stone, built 1871, value \$120,000. Franklin hall, laboratory, stone, built 1883, value \$100,923. Military hall and gymnasium, brick, built 1883, value \$32,700. President's house, brick, built 1870, value \$50,000. Barnes' hall, Christian association building, brick, built 1888, value \$53,659. Cottages, value \$39,529. Farm buildings, value \$10,987.

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## SYRACUSE UNIVERSITY

### *Syracuse*

CONSISTING OF

College of Liberal Arts

College of Medicine

College of Fine Arts

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

27 F 1849 Genesee College chartered.

29 Mr 1870 Genesee College removed from Lima to Syracuse.  
Name changed to Syracuse University. Incorporated under general law of 1848.

31 Ag 1871 Corner stone of college edifice laid and faculty inaugurated.

1872 Geneva Medical College transferred with library and collection to Syracuse, majority of its faculty continuing services in new location. First named The College of Physicians and Surgeons of Syracuse University.

6 Ja " First faculty meeting of medical department called by order of the trustees of the university.

23 Je 1873 College of Fine Arts established. Scope of college intended to include ultimately instruction in all fine arts. At present courses in architecture, painting and music only have been organized. Other courses to be organized as soon as possible.

## Year

1875 College of Medicine adopted full graded course of three years, with extension of scholastic year to nearly double usual length. Second college to adopt this course.

## TRUSTEES

## Elected

1890	President, Francis H. Root.....	Buffalo
1890	First Vice-President, Hon. George F.....	
	Comstock, LL. D.....	Syracuse
1888	Second Vice-President, Erastus F. Holden..	"
1888	Secretary, Edwin Nottingham, Ph. B.....	"
1881	Rev. Charles N. Sims, D. D., LL. D., ex officio	"
1883	Rev. J. E. Bills, D. D.....	Rochester
1884	Edwin R. Redhead, B. A.....	Fulton
1885	James B. Brooks, M. A.....	Syracuse
1885	Daniel Klock, jr.....	Troy
1885	Rev. C. C. McCabe, D. D.....	New York
1885	Rev. George L. Taylor, D. D., L. H. D.....	Brooklyn
1886	John D. Archbold.....	New York
1886	Hon. James J. Belden.....	Syracuse
1886	Hon. Peter Burns.....	"
1886	Rev. Isaac Gibbard, D. D.....	Rochester
1886	Alfred A. Howlett.....	Syracuse
1886	Theodore Irwin.....	Oswego
1887	Daniel Hayes.....	Gloversville
1887	C. N. Hoagland.....	Brooklyn
1887	Nathaniel C. Husted, M. D., LL. D.....	Tarrytown
1887	Eliphalet Remington.....	Ilion
1887	Rev. L. L. Sprague, D. D.....	Kingston, Pa.
1888	Hon. Charles Andrews, M. A.....	Syracuse
1888	O. H. P. Archer.....	New York
1888	Royal W. Clinton.....	Newark Valley
1888	George P. Folts.....	Herkimer
1888	Edmund Ocumpaugh.....	Rochester
1888	Rev. Luke C. Queal, D. D.....	Auburn
1888	Rev. John M. Reid, D. D., LL. D.....	New York
1889	Rev. Eli C. Bruce, D. D.....	Syracuse
1889	William Connell.....	Scranton, Pa.
1889	Hon. David Decker.....	Elmira
1889	Rev. Henry Graham, D. D.....	Albany

## Elected

1889 William I. Preston .....	Brooklyn
1889 J. D. Slayback .....	New York
1889 J. B. Wentworth, D. D. ....	Buffalo

## APPOINTED DURING YEAR

1890 Chester A. Congdon, B. A. ....	St Paul, Minn.
1890 D. Edgar Crouse .....	Syracuse
1890 Rev. Manly S. Hard, D. D. ....	Binghamton
1890 John H. Huyler .....	New York
1890 Rev. Benoni I. Ives, D. D. ....	Auburn
1890 Hon. Luther C. Slavens .....	Kansas City, Mo.
1890 Forrest G. Weeks .....	Skaneateles

## VACANCIES

Francis E. Trowbridge, Washington, term expired 25 Je 1890  
 Rev. William H. Olin, D. D., Binghamton, died Ja 1890

## COLLEGE OF LIBERAL ARTS

*Syracuse*

For historic sketch and trustees see foregoing.

## ADMINISTRATION

Figures in column at left give first year of service in Syracuse University.

1881 Chancellor, Rev. Charles N. Sims, M. A., D. D., LL. D. 800  
 University av.

B. A. Indiana Asbury University 1859, M. A. 1861, Ohio Wesleyan University 1860; D. D. Indiana Asbury University 1871, LL. D. 1882; Principal Thorntown Academy, Ind. 1859-60; President Valparaiso, Indiana Male and Female College 1860-62; Author Temperance problem, 1872, Life of Rev. T. M. Eddy, D. D., 1879, Commission to Onondaga Indians, 1884-85.

1871 Dean, Secretary and Book-keeper, John R. French, M. A., LL. D. 714 Crounse av.

B. A. Union 1849; M. A. Wesleyan 1852; LL. D. Allegheny College 1871; Teacher of mathematics, Falley Seminary 1849-54, Principal 1853-4; Principal, Mexico Academy 1855-9; Professor of mathematics, Genesee College 1864-71.

Treasurer, Thomas W. Durston.

Receiver of College dues, Frank Smalley.

Curator of the Museum, L. M. Underwood.

# INSTRUCTION

Figures in column at left give first year of service in Syracuse University and years spent in teaching.

1881 Rev. Charles N. Sims, M. A., D. D., LL. D. Chancellor and  
16 Professor of English literature, 800 University av.

See also "Administration."

1871 John R. French, M. A., LL. D. Dean and Gardner Baker  
43 Professor of Mathematics, 714 Crouse av.

See also "Administration."

1871 Rev. W. P. Coddington, M. A., D. D. William Penn Abbott  
31 Professor of Greek and Ethics, 106 Walnut pl.

B. A. Wesleyan 1860, M. A. 1863; D. D. Hamilton 1881; Professor of mathematics, Troy Conference Seminary, West Poughkeepsie, N. Y. 1860-2; Professor of ancient languages, Amenia Seminary 1862-4, Acting principal 1863-4; Professor of Greek, Cazenovia Seminary 1864-5, Acting principal 1865; Professor of modern languages, Genesee College 1865-71.

1871 Rev. John J. Brown, LL. D. Emeritus Professor of Chem-  
32 istry and Physics.

M. A. Genesee College 1860, Syracuse 1874; LL. D. McKendree College 1879; Principal Dansville Seminary 1857-63; Principal East Genesee Conference Academy 1863-5; Teacher of natural sciences, Falley Seminary 1865-70; Professor of chemistry and industrial mechanics, Cornell 1870-1; Professor of chemistry and physics, Syracuse 1871-89, Emeritus professor 1889-.

1872 George Fisk Comfort, L. H. D. Professor of Modern  
32 Languages and Esthetics, Vanderbilt House.

B. A. Wesleyan 1857, M. A. 1860; L. H. D. University of the State of New York 1890; Teacher of art and natural sciences, Amenia Seminary 1857-8; Fort Plain Seminary 1858-60; Professor of modern languages and esthetics, Allegheny College 1868-8; Lecturer on Christian art, Drew Theological Seminary 1865-72; Corresponding member Institute Archeologico, Rome, Berlin and Paris; Member American Philological Association, American Oriental Society; Honorary member Texas Historical Society, Western Association of Architects; Author Esthetics in collegiate education, 1865, Art museums in America, 1870, Series of German text-books, 1870, Modern languages in education, 1872, Woman's education and woman's health, 1875, Land troubles in Ireland, 1881, Editor Art department, Northern Christian advocate.



- 1874 Frank Smalley, M. A. Professor of the Latin Language and  
17 Literature, 607 University av.

B. A. Syracuse 1874, M. A. 1875; Instructor in zoology, geology and botany 1874-7; Adjunct professor of Latin 1877-81; Published Latin analysis, 1879, Latin verse, 1884.

- 1885 Rev. Charles J. Little, M. A., Ph. D., LL. D. William  
20 Griffin Professor of History and Logic.

B. A. University of Pennsylvania 1861, M. A. 1864; Ph. D. De Pauw University 1882; LL. D. Dickinson College 1885; Professor, Dickinson College 1874-85; Member American Academy of Political and Social Science.

- 1882 J. Scott Clark, M. A. Professor of Rhetoric, English  
11 Criticism and Elocution, 907 University av.

B. A. Syracuse University 1877, M. A. 1880; Principal High School, Evanston, Ill. 1879-82; Published A practical rhetoric, 1886.

- 1883 Lucien M. Underwood, Ph. D. Professor of Geology,  
13 Botany and Zoology, 411 Comstock av.

Ph. B. Syracuse 1877, Ph. M. 1878, Ph. D., 1879; Principal Morrisville Union School 1887-8; Teacher of natural science, Cazenovia Seminary 1878-9; Professor of natural science, Hedding College 1879-80; Professor of geology and botany, Illinois Wesleyan University 1880-3; Fellow American Association for the Advancement of Science 1885; Author Geological formations crossed by the Syracuse and Chenango Valley Railroad, 1870, Our native ferns and how to study them, 1882, Sytematic plant record, 1881, Our native ferns and their allies, 1882.

- 1889 Eugene Haanel, M. A., Ph. D., F. R. S. C. Professor of  
24 Physics and J. Dorman Steele Professor of Theistic Science, 113 McClellan st.

Ph. D. Breslau University, Prussia 1872; Charter member Royal Society of Canada 1883; Adrian College, Michigan 1866; Hillsdale College, Michigan 1867; Albion College, Michigan 1867-71; Victoria University, Coburg, Ontario 1872-89; Author On the application of hydriodic and hydro-bromic acids and tetrachloride of tin to blow-pipe analysis.

- 1886 Joseph T. Fischer, Ph. B. Instructor in Modern Lan-  
8 guages, 618 Crouse av.

Ph. B. Syracuse 1884; Principal Fulton Academy 1886; Member American Philological Association 1890.

1887 Henry A. Peck, M. A. Instructor in Mathematics, 105  
7 Marshall st.

B. A. Syracuse 1885, M. A. 1888; Teacher of mathematics,  
Dickinson Seminary 1885-7.

1887 Frederick C. Lyford, B. P. Instructor in Perspective  
4 Drawing and Artistic Anatomy, 904 Irving st.

B. P. Syracuse 1888.

1890 Ernest N. Pattee, M. S. Instructor in Chemistry, 907  
3 E. Adams st.

B. S. University of Rochester 1886, M. S. 1890; Principal,  
Greece, N. Y. 1887; Scientific department Hayward Col-  
legiate Institute, Fairfield, Ill. 1889.

1890 Orator F. Cook, Ph. B. Instructor in Biology, 411 Com-  
2 stock av.

Ph. B. Syracuse 1890; Teacher of natural science and German,  
Canandaigua Academy 1888-9; Corresponding member Torrey  
Botanical Club; Published (with Dr L. M. Underwood) hepa-  
ticae Americanae, A century of illustrative fungi, (with G. N.  
Collins) Notes on the North American myriapoda of the  
family Geophilidae with descriptions of three genera, A  
report on the Myriapoda of the eclipse expedition to the  
western coast of Africa.

#### PROMOTIONS

##### In salary alone

Henry A. Peck, M. A.

Frederick C. Lyford, B. P.

#### HONORARY DEGREES

D. D. — Rev. George M. Colville . . . . . Binghamton  
Rev. Nicholas H. Holmes . . . . . Pittsburgh, Pa.  
Rt. Rev. John Sugden, Bishop of Selsey, Eng.  
LL. D.—Hon. St Clair McKelway . . . . . Brooklyn

#### COLLEGE APPOINTMENTS

(None)

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Fitch scholarship, Charles Dennison Kellogg, Spanish Ranch, Cal . . . . .	\$20
Edwards scholarship, George Fletcher Shepherd, Oswego . . .	30

		Value
Cooper scholarship, Clarence Loomis Peaslee, Adams .....		\$60
Farman	" Frank David Torrey, Vernon.....	30
Sturdevant	" Fred. Webster Sherwin, Canton é.....	60
Armstrong	" Frederick Hiram Watkins, Pompey....	60
Schofield	" George Keiser Statham, North Fork, Pa..	30
Lockland	" Joseph Reynolds, Watertown.....	60
Sims scholarship, Sherburn Cilley Hutchinson, E. Orange, Vt.		60
Hunt scholarship, Marcus Louis Glazer, Fair Mount, N. J...		60
Gouldy	" David Casler Monroe, Cazenovia.....	60
Coleman	" Lorenzo Dow Van Arnam, Gloversville...	60
Mosier	" Grace Evangeline Townsend, Syracuse ...	60
Chubbuck	" William A. Jenner, Clyde.....	30
Dexter	" Charles Henry Wheeler, Brockport .....	60
Allen	" John Blake Hillyer, New York .....	60
Folts	" William Henry Wakeham, New York. ...	60
Lewis	" William Hartel, Buffalo .....	60
Tyler	" Theodore Orville Beebe, Cutchogue.....	60
Newberry	" Howard J. Banker, Schaghticoke .....	60
Tate	" Jay Wilbur Somerville, Johnsburgh.....	60
Lawton	" Rose Adele Baird, Olean.....	60
Vrooman	" Henry Hoar, Ansonia, Conn.....	60
Oswego 1st church scholarship, Ada Adell Cooper, Oswego..		60
Coyle scholarship, John C. Culligan, Ithaca.....		60
Hammond	" Charles Howland Bassett, Ansonia, Conn.	60
Stillwell	" Julia Skinner, Binghamton.....	60
Underhill	" Minne Adelle Mason, Geneseo .....	60
Olean M. E. church scholarship, Samuel Norton Pinney,		
Olean .....		60
Centenary church, Binghamton, scholarship, Annie May		
Knapp, Binghamton.....		60
Pike scholarship, Charles Willis Fyfe, Franklin.....		60
Lockwood	" John Augustus Hamilton, Moriah.....	60
Pelton	" Mary Newkirk, Syracuse .....	20
Lockport	" Earl Dorman Shepard, Le Roy .....	60
Moffitt	" Herbert Sumner Miller, Avon.....	60

## REQUIREMENTS FOR ADMISSION

See table 2.

## COURSES OF STUDY

The classical course is substantially the same as is pursued in the best American colleges, including a considerable amount of modern languages.

The Latin scientific course is nearly identical with the classical, except the substitution of German and other subjects for Greek.

The scientific course in place of Latin and Greek substitutes German and French, and some additional studies in mathematics, natural sciences, literature, history and philosophy.

In the junior year, nearly one third of the student's time is devoted to elective work ; in the senior year, the range of election is somewhat larger.

## ENGLISH LITERATURE

The work in this department embraces the study of English literature from its beginnings to the present, and so much of the history of the English people and language as is necessary to an intelligent comprehension of the literature.

The writings of the best authors are examined and characterized in the classes. While much of the instruction is given by lectures, text-books are retained and used.

*Freshman* — Welch's English literature and language, vol. 1.

*Senior* — Welch's English literature and language, vol. 2.

*Senior* (elective) — Lectures on literary style and composition, and English and American classics.

## LATIN LANGUAGE AND LITERATURE

Two text-books are used throughout the course, Harkness' standard Latin grammar as the constant reference manual, and Smalley's Latin analysis as an exercise in etymology designed to secure the vigilant study and correct analysis of Latin words.

*Freshman* — *First term*, Cicero, Cato Major and Lælius ; prose composition ; Roman history, Merivale. During this and the following terms, Latin syntax and etymology are carefully reviewed, the student committing illustrative sentences in syntax. *Second term*, Livy, book 1 or 21 ; Prose composition ; Roman history ; and frequent exercises in writing translations of Livy. *Third term*, Juvenal's satires ; written translations of Juvenal, and exercises in reading Latin at sight.



*Sophomore — Second term*, Horace; selections from the Odes, Epodes, Satires and Epistles; Roman history complete; essays on Roman life, customs, dress, buildings, utensils, economy, etc. Prosody is reviewed and constant attention given to scanning the meters of Horace.

*Junior — First term*, Tusculan disputations, first book, together with Somnium Scipionis from the De Republica, and extracts from De Senectute and De Amicitia, embracing nearly all that Cicero wrote on the immortality of the soul; brief lectures on Greek philosophy, designed to explain the numerous allusions of Cicero to the doctrines of ancient philosophers, and to give a connected view of the schools which were the source of his eclecticism. *Second term*, (elective) either of the following: Tacitus; Germania and Agricola, or Chaplin's selections: Lucretius; De Rerum Natura; Quintilian; Institutes of oratory, books 10 and 12. Horace; art of poetry and epistles: Plautus: or Terence. *Third term*, selections from the minor poets, Catullus, Tibullus, Propertius, etc.; Latin literature; Bender.

*Senior — First term*, (elective) Brown's, also Cruttwell's, with lectures on the origin and development of the Latin language, and its early records and relics.

#### GREEK LANGUAGE AND LITERATURE

In teaching the language, the aim is to enrich the student's English vocabulary, to develop a power of interpretation and continuous attention, and to cultivate the accurate and fluent use of words. Attention is given to the application of grammatical laws, to the oral and written translation of Greek into English and English into Greek, the distinction of synonyms, the comparison of idioms, the growth and decay in the form and sense of words together with the laws of their interchange among the cognate tongues.

In the higher classes, the text is examined with more special reference to the style, subject matter and spirit of the author.

The study of the history, geography and archeology is pursued not only for the intrinsic value of these subjects, but also to give a just appreciation of the spirit of the authors read and the age in which they lived.

The authors most generally read are Homer, Aeschylus, Sophocles, Euripides and Pindar among the poets; Demosthenes and Lysias in oratory and Plato in philosophy.

*Freshman* — *First term*, Owen's Homer's Iliad, four books; Hadley and Allen's Greek grammar. *Second term*, Demosthenes on the crown; Boise's Greek prose composition. *Third term*, Demosthenes on the crown, completed. Boise's Greek prose composition.

*Sophomore* — *First term*, Plato's Apology and Crito: Lectures on Greek philosophy. *Third term*, Greek tragedy: Lectures on the Greek drama.

*Junior* — *Third term*, Greek comedy (elective).

*Senior* — *First term*, Greek literature (elective); *Second term*, (elective) Anthologie aus den Lyrikern der Griechen, Buchholz.

#### MODERN LANGUAGES

The time given to these languages is occupied in tracing their philological features and their relations to cognate languages, in practical exercises in conversation and writing, and in the study of classical, scientific and artistic literature.

*German*; *First year*, Comfort's German course, first German reader, and 30 pages of the larger German reader; also 40 exercises from the Joynes Otto German course; *Second year*, Comfort's large German reader, and Manual of German conversation; portions of Weber's history of German literature; and William Tell or other classic dramas.

*French*; *First year*, Otto's French grammar, a French comedy and La Petite Fadette, by George Sand; *Second year*, Demogeot's history of French literature and various classic dramas.

*Italian*; Fontana's grammar, Giudici's Italian literature and various classic dramas.

#### MATHEMATICS

##### *Freshman*

*Algebra*, (Wentworth's college) — quadratic equations, reviewed, calculations of radicals, theory of indeterminate coefficients, binomial theorem and its application to the development of functions, theory and use of logarithms, elements of the theory of equations, and Horner's method of solving higher equations.

*Geometry*, (Wentworth's) — regular polygons, measurement of the circle, maxima and minima of plane figures, solid and spheric geometry.

*Sophomore*

*Trigonometry*, (Wentworth's) plane and spherical; *Land surveying* with field exercises.

*Analytic geometry*, (Bowser's) — construction of equations, production of equations of plane loci, transformation of coordinates, properties of the conic sections.

*Calculus*, (Bowser's) — *differential*, differentiation of functions of a single variable, Maclaurin's and Taylor's theorems with binomial theorem and theory of logarithms deduced, maxima and minima of functions of a single variable, evaluation of indeterminate forms; *Integral*, elementary forms, binomial differentials, rectification and quadrature of plane curves, cubature of volumes of revolution.

*Junior*

*Calculus*, an additional term is devoted to the study of the properties of curves and more advanced integrations, elective in the classical and Latin scientific courses; *Mechanics*, (Bowser's) — [elective in the classical and Latin scientific courses, required in the scientific course,] composition of forces, center of gravity, problems in construction, discussion of machines, the pendulum, projectiles, work, composition of rotations.

*Astronomy*, (Young's) — the first term's work in this subject is required in all the courses and embraces the elementary principles of mathematical and physical astronomy, such as parallax, refraction, latitude and longitude, dimensions and form of the earth, its orbital motion, precession, nutation, aberration, elements of a planet's orbit, theory of tides and eclipses, including the computation of a lunar eclipse in full. The subject of descriptive astronomy is pursued as an elective in the fall term of the senior year; and in the winter and spring terms special classes will be formed for observatory work. No person is eligible to the class for observatory work who has not satisfactorily accomplished the work of both the preceding terms.

## CHEMISTRY

Chemistry is pursued in the junior year; including the history of chemistry and chemical philosophy; stoichiometry and the univalent elements; the metals and organic chemistry.

The lectures are illustrated by experiments and followed by frequent reviews and examinations.



Students in analytic chemistry conduct with their own hands a systematic course of qualitative analysis, under the supervision and direction of the professor.

To those desiring it, instruction is given in quantitative analysis, chemical technology and toxicological investigations.

A set of apparatus and reagents sufficient for laboratory use is furnished to each student at the opening of the term.

#### PHYSICS

During the sophomore year a general course of lectures is delivered on the elements of mathematical physics, molecular physics, hydrostatics, hydrodynamics, pneumatics, the kinetic theory of gases, acoustics and the correlation and conservation of energy.

The notes taken of the lectures in the class-room, are required to be put into proper form and transcribed into a note-book. These are from time to time examined by the lecturer to assure himself that the subject is properly grasped and the transcription of the notes not unduly delayed.

*Elective physics* — Electricity and magnetism, which has assumed such importance in these modern times, has been selected for elective physics, to train students in the methods of physical inquiry and to introduce them into the knowledge of physical measurements.

#### MINERALOGY

A course of lectures is delivered on crystallography fully illustrated by models, on the physical character of minerals and on blowpipe analysis.

The examination in this subject is entirely practical and consists in determining the system, formula, description and derivation of any two out of the collection of 100 crystallographic models, and a description of the physical character and determination of the chemical constituents of any two minerals furnished in a sealed box by the examiner.

#### GEOLOGY, ZOOLOGY AND BOTANY

The work in this department is uniform in all courses. In the last term of the sophomore year students receive instruction in the general principles of biology and simple methods of practical work, consisting of the examination with a hand lens of the struct-



ures of the higher plants. To those students whose work in this subject is of a high grade there is open a course extending through four terms usually divided between botany and zoology. This work is almost wholly practical, consisting of the examination of plant and animal structures with the compound microscope, and the study of the life history of typical forms of plants and animals. Collateral reading is also required. In the first term of the senior year geology is required in all courses. A second term of this subject is elective. The work of the first term is general, that of the second is more special.

#### HISTORY

History is studied in its principles as well as in its facts. To familiarize the student with the best methods of study, and to suggest appropriate courses of historical reading, are among the important objects aimed at. The instruction is both by lecture and text-books.

*Freshman*—Lectures are given on historical propædeutics, in which the methods of historic study and writing are examined, and the necessary auxiliaries of history—chronology, geography, genealogy and ethnography—are discussed in their principles and application. During the third term, Rawlinson's ancient history is studied. Special attention is directed to the valuable authorities mentioned by this author, and their scope and relative value are estimated.

*Sophomore*—During the first term, in connection with a text-book, lectures are given on the Roman law; Mohammed and Mohammedism; the causes, development and consequences of the crusades; the medieval literature, etc. During the second and third terms the reformation and post-reformation history is examined. In addition to the text-book, during the second term, lectures are given on the comparison of French and English government prior to 1789. Throughout the year, dissertations and portraiture of important historical characters are prepared by the students; also the class is specially instructed in regard to the authorities and literature of the various periods, and required to give analyses and estimates of historical works.

*Junior and senior*—The instruction in these years is entirely by lecture. Special courses are accessible to both classes. Attention is given to the examination of the tribal migrations before and after the Roman downfall, and to the great revolutions of modern

times. The lectures on the philosophy of history are designed, primarily, to summarize the principles and laws that have been discovered and illustrated during the preceding years.

#### ESTHETICS

Weekly lessons are given on esthetics during the first term, and on the history of the fine arts, during the second and third terms of the senior year.

Students in the scientific and Latin-scientific courses are required, and students in the classical course may elect to take two hours of study a week during one term, in each of the following branches; free hand drawing, mechanical drafting and architectural drafting. Students in the scientific course are also required to attend classes in perspective drawing three hours a week during the first term of the sophomore year.

#### RHETORIC, ENGLISH CRITICISM AND ELOCUTION

The instruction in this department aims to cover those subjects which directly pertain to the composition and forcible delivery of good English. The work is continuous throughout the entire course.

*In English criticism*, especial attention is given to the requisites of good style. As to punctuation and form, students are expected to present all essays and oration manuscript in such form that they would, if published, require no corrections or additions by the printer. Instruction, with exercises, in the formation of essay outlines, is also made a prominent feature.

*In elocution*, the aim is constantly toward natural, rather than artificial methods of delivery. Throughout the course especial stress is laid upon the distinctness of enunciation. In gesture, the English system, as originally enunciated in Austin's *Cheironomia*, and afterwards modified by Bacon, is taught together with the elements of the Delsarte philosophy of expression. In orthoepy, the preferred pronunciation of Webster's unabridged dictionary is taken as a standard. Consecutively, during the freshman and sophomore years, are given and practiced various fundamental exercises in breathing, articulation, etc.

The text-books in English criticism during the freshman and sophomore years cover thoroughly the elements of rhetoric, and prepare the student for the more advanced work of the senior year.

*Freshman*

*English criticism* — Clark's practical rhetoric.

*Elocution* — English phonation, using the Bell vowel table with Russell's treatment of the consonants; Articulation and chest exercises; Elements of inflection and emphasis, with notes on tone quality, utterance, pitch, force, time and slides, using Dickens' Christmas carols for practice and illustration.

*Essays* — Three original essays per term of not less than 500 nor more than 700 words, on subjects assigned. These essays are carefully corrected, criticised in class, returned to the writers, and afterward read, in part before the class.

*Sophomore*

*English criticism* — Analysis of prose masterpieces, with class work on the essays. *Elocution* — *First term*, Bacon's manual of gesture with notes on Delsarte: *Second term* — three declamations of prescribed character delivered and criticised before the class; *Third term*, analysis and interpretation of six plays of Shakspeare.

*Essays* — Three each, in first and third term of not less than 600 nor more than 800 words on subjects assigned. During the second term the declamations take the place of essays.

*Junior*

*Elocution* — *First term*, declamations of prescribed character delivered and criticised before the class; *Second term*, extempore speaking. *Third term*, analysis and interpretation of six or more of Shakspeare's plays.

*Orations* — One each term, of not more than 1,000 words, after private rehearsal, is delivered in chapel.

*Senior*

*Elocution* — Opportunity is given for continuing the work of the junior year.

*Rhetoric* — *Third term*, analysis of English prose masterpieces. One original oration of about 1,000 words is rehearsed and is delivered at a senior exhibition in the chapel within the first two terms: a like oration is required from each member of the class on the first of May, from which selections are made for delivery at commencement.

*Early English* — An elective course of one hour per week in each term of the junior year is provided in history of the English



language, Anglo-Saxon and early English. The course is consecutive and is intended to give the student a working knowledge of the origin of his native tongue.

#### METAPHYSICS AND LOGIC

It is designed, by lectures and the use of text-books, to trace briefly the history of mental science, and by class discussion, by essays on appointed themes, and by a course of select reading, to render the student familiar with the characteristic principles of the leading historic systems.

*Junior — Third term*, Handbook of psychology, Sully.

*Senior — First term*, History of philosophy, Morell.

*Second term*, History of philosophy, (elective) Morell.

Logic is studied during the first term of junior year. To the class are assigned frequent exercises in classification, argumentation and method.

#### ETHICS AND CHRISTIAN EVIDENCES

In the department of ethics and Christian evidences, the subjects are taught by text-books and lectures.

*Senior — First term*, Calderwood's handbook of moral philosophy;  
*Third term*, Hopkin's Evidences of Christianity.

#### JURISPRUDENCE AND POLITICAL ECONOMY

*Senior — First term*, political economy and general principles of jurisprudence, (elective); *Second term*, international law, (elective);  
*Third term*, constitution of the United States, (required).



## FRESHMAN YEAR

CLASSICAL		Hours per week	LATIN SCIENTIFIC		Hours per week	SCIENTIFIC	
			FIRST TERM				
4	Algebra	4	4	Algebra	4	4	Algebra
3	Physiology	3	3	Physiology	3	3	Physiology
4	Latin	4	4	Latin	2	2	Chemical physics
3	Greek	3	3	German	3	3	German
1	English criticism	1	1	English criticism	2	2	Free hand drawing
1	Elocution	1	1	Elocution	1	1	English criticism
			SECOND TERM				
4	Algebra	4	4	Algebra	4	4	Algebra
4	Latin	4	4	Latin	2	2	Chemical physics
3	Greek	3	3	German	3	3	German
3	English literature	3	3	English literature	2	2	Mechanical drafting
1	English criticism	1	1	English criticism	3	3	English literature
1	Elocution	1	1	Elocution	1	1	English criticism
			THIRD TERM				
4	Geometry	4	4	Geometry	4	4	Geometry
3	Latin	3	3	Latin	2	2	Chemical physics
5	Greek	5	5	German	5	5	German
2	Ancient history	2	2	Ancient history	2	2	Ancient history
1	English criticism	1	1	English criticism	2	2	Architectural drawing
1	Elocution	1	1	Elocution	1	1	English criticism
1		1			1	1	Elocution

## SOPHOMORE YEAR

CLASSICAL	LATIN SCIENTIFIC	SCIENTIFIC
Hours per week	Hours per week	Hours per week
	FIRST TERM	
4 Trigonometry	4 Trigonometry	4 Trigonometry
2 Medieval history	2 Medieval history	2 Medieval history
3 German	3 German	3 German
3 Physics	3 Physics	3 Physics
3 Greek	2 Free hand drawing	3 Perspective drawing
1 English criticism	1 English criticism	1 English criticism
1 Elocution	1 Elocution	1 Elocution
	SECOND TERM	
4 Analytic geometry	4 Analytic geometry	4 Analytic geometry
3 Modern history	3 Modern history	3 Modern history
3 German	3 German	3 German
3 Physics	3 Physics	3 Physics
3 Latin	3 Latin	2 Shades and shadows
1 Mechanical drafting	2 Mechanical drafting	2 Isometrical projection
1 English criticism	1 English criticism	1 English criticism
1 Elocution	1 Elocution	1 Elocution
	THIRD TERM	
2 Biology	2 Biology	2 Biology
4 Calculus	4 Calculus	4 Calculus
2 Modern history	2 Modern history	2 Modern history
4 German	3 German	3 German
3 Greek	1 English criticism	1 English criticism
1 English criticism	1 Elocution	1 Elocution
1 Elocution	2 Architectural drafting	3 Surveying
3 Surveying	3 Surveying	

## JUNIOR YEAR

CLASSICAL		Hours per week	LATIN SCIENTIFIC		Hours per week	SCIENTIFIC	
French Logic Latin Elocution German History of English revolutions Free hand drawing Hebrew Botany Physics History of English language	4	4	FIRST TERM  French Logic Latin Elocution Calculus Botany History of English revolutions Physics History of English language  SECOND TERM  French Astronomy Chemistry Elocution History of French revolution Latin Physics Anglo-Saxon Botany	4 4 3 1 4 6 2 3 1	4 4 1 4 1 3 2 3 1	French Logic Elocution Calculus American revolution Botany History of English revolution Physics History of English language	
	4	4					
	3	3					
	3	3					
	1	1					
	2	2					
	2	2					
	3	3					
	3	3					
	1	1					
French Astronomy Chemistry Elocution Mechanical drafting History of French revolution Latin Physics Anglo-Saxon German Comparative philology Hebrew Botany Greek comedy	3	3	THIRD TERM  French Chemistry Psychology Latin Elocution Mechanics History of education Physics Zoology Early English	3 4 4 1 2 2 3 1 3	3 4 4 1 2 2 3 1 3	French Astronomy Chemistry Elocution History of French revolution Physics Anglo-Saxon German literature Botany	
	4	4					
	4	4					
	1	1					
	2	2					
	2	2					
	3	3					
	3	3					
	1	1					
	1	1					
French Chemistry Psychology Latin Elocution Mechanics History of education Physics German Architectural drafting Hebrew Zoology Early English	2	2	THIRD TERM  French Chemistry Psychology Latin Elocution Mechanics History of education Physics Zoology Early English	2 2 4 3 3 5 1 3 3 1	2 2 4 1 5 1 3 3 1	French Chemistry Psychology Elocution Mechanics History of education Physics German literature Zoology Early English	
	4	4					
	4	4					
	3	3					
	1	1					
	5	5					
	1	1					
	3	3					
	3	3					
	1	1					

## SENIOR YEAR

CLASSICAL		LATIN SCIENTIFIC		SCIENTIFIC	
Hours per Week		Hours per Week		Hours per Week	
3	History of philosophy	3	FIRST TERM	3	History of philosophy
3	Geology	3	History of philosophy	3	Geology
1	Esthetics	3	Geology	1	Esthetics
3	Political economy	3	Political economy	3	Political economy
3	Jurisprudence	3	Jurisprudence	3	Jurisprudence
3	French literature or Italian	3	French literature or Italian	3	French literature or Italian
2	Greek literature	3	Analytic chemistry	2	Analytic chemistry
3	Analytic chemistry	3	American revolution	3	Zoology
1	American revolution	3	Roman literature	3	Zoology
2	Roman literature	3	Zoology	2	Astronomy
3	Zoology	3	Astronomy		
2	Astronomy	2	SECOND TERM		
4	Moral philosophy	4	Moral philosophy	4	Moral philosophy
1	Art history	1	Art history	1	Art history
5	English literature	5	English literature	1	Philosophy of history
1	Philosophy of history	1	Philosophy of history	5	English literature
3	History of philosophy	3	History of philosophy	3	History of philosophy
2	French literature or Italian	3	French literature or Italian	2	French literature or Italian
2	German literature	2	German literature	2	Constitutional history of England
2	Constitutional history of England	2	Constitutional history of England	2	Analytic chemistry
2	Analytic chemistry	2	Analytic chemistry	2	International law
3	Greek tragedy	2	International law	3	Geology
2	International law	3	Geology	3	Mineralogy
3	Geology	2	Mineralogy	2	Bible history and ethics
2	Mineralogy	2	Bible history and ethics	2	Astronomy
2	Astronomy	2	Astronomy		
3	Bible history and ethics	2	THIRD TERM		
1	Art history	1	Art history	1	Art history
5	Christian evidences	5	Christian evidences	5	Christian evidences
3	Constitutional law	3	Constitutional law	3	Constitutional law
3	History of civilization	3	History of civilization	3	History of civilization
2	German literature	3	German literature	3	Analytic chemistry
2	Analytic chemistry	2	Analytic chemistry	2	French literature
3	French literature	2	French literature	3	Italian renaissance
3	Italian renaissance	3	Italian renaissance	2	Astronomy
2	Astronomy	2	Astronomy	2	Rhetoric
2	Rhetoric	2	Rhetoric		



## REQUIREMENTS FOR GRADUATION

The university confers on those who satisfactorily complete the classical course the degree of bachelor of arts; the Latin-scientific course, bachelor of philosophy; the scientific course, bachelor of science.

The degree of doctor of philosophy is conferred only on regular graduates of reputable colleges, complying with the conditions set forth in the post-graduate courses of study, published by the university. These courses may be obtained on application to the dean of the faculty. The usual master's degree is conferred three years after that of bachelor on such as pursue liberal studies.

## BUILDINGS

Main building, four story lime stone, built 1873, total floor area 70,000 sq. ft., 15 class rooms, about 600 seats, value \$150,000; chapel, laboratories and museum in main building. Art gallery and music hall in the John Crouse College, a four story brown sand stone building, built 1889, floor area 70,000 sq. ft., 44 class rooms, about 1,100 seats, value \$400,000. Library, three story brick, built 1889, floor area 16,000 sq. ft., value \$40,000. Observatory, two story and tower, lime stone, built 1888, floor area 1,000 sq. ft., value \$12,000.

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## UNIVERSITY OF THE CITY OF NEW YORK

### DEPARTMENT OF LAW

*Washington sq., New York*

For historic sketch and trustees see University of the City of New York, pp. 646-647.

## ADMINISTRATION

Figures in column at left give first year of service in University of the City of New York.

1881 Chancellor, John Hall, D. D., LL. D.

See also University of the City of New York, Department of Arts and Sciences.

1884 Vice-Chancellor, Henry M. MacCracken, D. D., LL. D.

See also University of the City of New York, Department of Arts and Sciences.

- 1870 Dean, David Ralph Jaques, LL. D. 120 Broadway.  
 B. A. Harvard 1842, LL. B. 1844; LL. D. University of the City of New York 1878; Dean 1888- ; Member New York State Bar Association, American Association for the Advancement of Science, American Institute.
- 1881 Secretary, Isaac Franklin Russell, D. C. L. 120 Broadway.  
 B. A. University of City of New York 1875, LL. B. 1877, M. A. 1878; LL. M. Yale 1879, D. C. L. 1880; Member American Academy of Political and Social Science.

## INSTRUCTION

Figures in column at left give first year of service in University of the City of New York and years spent in teaching.

- 1870 David Ralph Jaques, LL. D. Professor of Municipal Law, 120 Broadway.  
 See also "Administration."
- 1881 Isaac Franklin Russell, D. C. L. Professor of Contracts and 10 Procedure and Political Science, 120 Broadway.  
 See also "Administration."
- 1881 A. E. Macdonald, LL. B., M. D. Professor of Medical Juris- 17 prudence, Ward's Island.  
 M. D. University of the City of New York 1870, LL. B. 1881; Professor of medical jurisprudence and psychological medicine, University Medical College; General superintendent, New York City Asylum for the Insane.
- 1885 William Allen Butler, LL. D. Lecturer on Admiralty Juris-  
 diction and Practice, 54 Wall st.  
 B. A. University of the City of New York 1843, M. A. 1846, LL. D. 1880; President American Bar Association 1885; Author *The future*, 1843, *Barnum's Parnassus*, 1856, *Nothing to wear*, 1857, *Two millions*, 1858, *Martin Van Buren*, 1862, *Lawyer and client*, 1871, *Collected poems*, 1872, *Mrs Limber's raffle*, 1876, *Domesticus*, 1886.
- 1885 Cephas Brainerd. Lecturer on International Law, 133 E. 18 st.
- 1885 Charles Fraser MacLean, J. U. D. Lecturer on the Prin- 5 ciples of Criminal Law.  
 B. A. Yale 1864, Ph. D. 1866; J. U. D. University of Berlin 1869; Lecturer on international law, Columbia Law School 1873-4;
- 1885 Amasa A. Redfield, Lecturer on Descent, Distribution, 5 Restraints on Alienation by Will.  
 B. A. University of the City of New York 1860; Published five vols. *Surrogates' reports of State of New York* 1864-82, *Author Law and practice of surrogates' courts*, 1875, (with Thomas G. Shearman) *The law of negligence*, 1869.

- 1885 Austin Abbott, LL. D. Lecturer on Preparation for Trial,  
5 the Pleadings, Facts and Law, 16 E. 64 st.  
B. A. University of the City of New York 1851, LL. D. 1885 ; Mem-  
ber New York State Bar Association, American Bar Associa-  
tion ; Author Trial evidence, Trial briefs for civil and criminal  
cases, New York Digest with supplement and annual contin-  
uations ; Editor Abbott's New cases annotated.
- 1887 Hon. Myer S. Isaacs. Lecturer on Examination of Titles to  
3 Real Estate, 110 E. 73 st.  
B. A. University of the City of New York 1859, M. A. and LL. B.  
1862 ; Member Archæological Institute of America, American  
Academy of Political and Social Science, Société des Études  
Juives ; President Baron De Hirsch Fund, Member New York  
State Bar Association, American Bar Association.

HONORARY DEGREES

(None)

COLLEGE APPOINTMENTS

Valedictory, Paul Ransom Towne .....	New York
Orations, Jacob Barnett, B. A .....	"
Charles Martin Camp .....	Brooklyn
Arthur Edwin Burns, M. D .....	"

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
B. F. Butler oral examination prize, Albert Douglass Haff, Amityville .....	\$100
B. F. Butler written examination prize, Paul Ransom Towne, New York, and Charles Allen Wendall, New York....	100
Elliott F. Shepard prize, Thomas Gilleran .....	100
Faculty prizes, Frank Alexander Erwin, M. A. ....	100
Charles Maximilian Boerman .....	100
Keyran John O'Connor .....	100

REQUIREMENTS FOR ADMISSION

See table 3.

COURSES OF STUDY

The full course is completed in two years ; but all studies of the course are taught each year, new classes being formed annually. An allowance of not more than one year is made for previous study, and the student in such case is admitted to advanced standing.



At the opening of the year the students are divided into two classes, the senior and the junior, according to their proficiency and previous preparation.

Instruction is by lectures by the regular professors and special lecturers, and by the study of text-books, cases and statutes (select titles), recitations, moot courts and private moots and examinations.

The lectures by the professors are either expositions to the class in connection with the text-books read or separate discussions of topics not treated in the text-books or requiring fuller and more practical treatment.

The classes are required to attend and take notes of the lectures, and students are expected to recite to the professor, and to be questioned by him on one or more points of the subject under consideration. The design is to give to the studies of each student the personal aid and attention of the professor.

The hours of the lectures are so arranged that students can, while attending the school, pursue a clerkship in an attorney's office during the business hours of the day.

It is designed to give to the student :

A thorough preparation for the examinations required for admission to the bar ;

A competent knowledge of the principles of substantive law, and of the law of remedy, including pleading, evidence and practice ;

A familiarity with the best methods of study and clear views of the science of law as a whole, and of all its parts and of their relation to each other, so that both in preparing for the bar and after his admission to the bar, and during his whole professional life his study of the law shall be systematic, with definite purpose and adequate results, and not an aimless and desultory reading of statutes, text-books and reports.

Of these three objects of the law school course, the one last mentioned must be deemed first in importance ; as to the second, the actual knowledge of legal principles with which the mind can be stored in a two years' course is necessarily limited, and must depend for its value not so much on the quantity learned as on the system and method of learning and the careful and habitual reference by the student (constantly inculcated by the professors) of each head and subject of study to the related subjects and the whole body of the law ; while admission to the bar, the object



first named, is, in fact, of secondary importance, yet, nevertheless, it is naturally a subject of much solicitude with young men anxious to reach the profession and be at work as soon as possible, and every effort is made by the professors to further their desire in this regard, in every way consistent with a sound legal training.

The scheme of studies embraces the history of the law, jurisprudence, the Roman law, international law and municipal law.

The time that can be given to the three important subjects first named is necessarily limited. They are considered in junior year in connection with Blackstone's Commentaries and Pomeroy's Municipal law, and in certain of the lectures. International law is also treated in the lectures.

The time and attention of the classes are necessarily given mainly to the various heads of municipal law — including common law, equity and the statutes; and every subject prescribed for examination by the rules of the supreme court of New York is included in the course in municipal law, the studies in which are classified as follows:

#### MUNICIPAL LAW

*Persons, including corporations and rights purely personal.*

*Personal property.*

*Real property:* Titles and conveyancing; Vendors and purchasers.

*Contracts:* In general: Particular contracts; Agency; Bailment; Bills and notes; Guaranty; Insurance; Marriage; Partnership; Sales; Shipping.

*Equity jurisprudence,* including principles of relief; Modes of relief; Wills; Administration; Insolvency.

*Medical jurisprudence.*

*Maritime law.*

*Torts.*

*Criminal law.*

*Remedies:* Pleading; Evidence; The New York system of practice; Criminal procedure; Surrogate and admiralty practice.

*Constitutional law* of the United States and New York; Legislation and administration in New York.

#### PHILOSOPHY, HISTORY, SOURCES AND PRACTICE OF LAW

1 Classification of subjects and methods of study.

(Encyclopedia and methodology)

## 2 Sources

- (a) The *corpus juris* and the Latin of its authors.
- (b) Early English Latin treatises.
- (c) The English treatises in Norman French and the year-books.
- (d) Text-writers and commentators before Blackstone.
- (e) Commentators on the commentaries of Blackstone, and estimate of his work since his day.
- (f) Treatment of law as a science since Blackstone and Bentham, by English and American writers.

3 Digests and reports; how to use them.

4 Practical conveyancing and searching titles.

5 Clerical duties of the attorney's offices.

6 The science of jurisprudence, classification, codification.

7 Law reform in England.

8 Law reform in America.

*Maritime law* — The course of lectures is given by William Allen Butler, LL. D.

*Constitutional law* — A course is given by Professor Russell to the undergraduates.

*Medical jurisprudence* — The instruction is by lectures only. Attendance at these lectures is optional, but is urgently recommended, as the subjects treated, including testamentary capacity, are of the first importance.

Of the three branches of the law of remedy, evidence is taught with the utmost care, and in common law pleading there is a short course, as it is believed that some knowledge of the science of allegation is necessary to an understanding of the code "systems" of pleading and leads to accurate practice; while procedure is studied in the civil and criminal codes of New York with careful reference to general principles and to the text-books of common law and equity pleading published before as well as since the codes.

Class instruction is given by Professor Jaques and Professor Russell, as follows:

By Professor D. R. Jaques — Real property, equity jurisprudence, evidence, pleading.

By Professor I. F. Russell — Persons and personal property, Contracts, Torts, Crimes, the New York practice, civil and criminal.

By Professor Jaques or Professor Russell, lectures are given on some of the subjects enumerated above relating to the philosophy, history, sources and practice of the law.

### Lectures by special lecturers

#### ADMIRALTY AND MARITIME LAW JURISDICTION AND PRACTICE

By William Allen Butler, LL. D.

1 Original sources of admiralty and maritime law and jurisdiction ; The maritime law of continental Europe.

2 The jurisdiction of the admiralty in England ; Maritime law, as regulated by statute.

3 Admiralty and maritime jurisdiction in the United States under the federal constitution and the acts of congress.

4 The courts of the United States having admiralty jurisdiction ; Procedure *in rem* and *in personam*, and in prize cases.

#### INTERNATIONAL LAW

By Cephas Brainerd

1 Elements constituting a nation ; International law, What it is ; Its sources, principles and general rules ; Importance of its study.

2 Obligations of nations to each other and each other's citizens in time of peace ; Self-preservation ; Comity ; Intervention ; Extradition ; Offences against international law.

3 Intercourse between nations ; Right of legation ; Diplomacy ; Treatise ; The adjustment of national disputes ; National remedies short of war ; Embargo, retorsion, reprisals.

4 Rights and duties of belligerents in respect of each other, in respect of individuals, and property on land, and on the high seas

5 Neutrality ; Rights and duties of neutral nations.

6 Blockades ; Contraband of war ; Capture and prize ; Prize courts and procedure therein.

#### PRINCIPLES OF CRIMINAL LAW

By Charles F. MacLean, J. U. D.

1 Theories of punishment ; Persons punishable for crime ; Parties to crime ; Degrees of crime.

2 Offences, particularly against the state.

3 Offences, particularly against individuals ; Against the person.

4 Offences, particularly against individuals ; Against property.



5 Prevention of crime, Courts of criminal jurisdiction; Commencement of proceedings. Arrest, Examination.

6 Indictment; Trial; Proceedings after trial; Appeals.

#### TESTAMENTARY DISPOSITIONS; RESTRAINTS ON THE POWER OF TESTAMENTARY ALIENATION

By Amasa A. Redfield

1 Liberty of testamentary alienation of property — its history and effects on political and municipal institutions.

2 The system of France and modern continental Europe; the English statute of wills and system of family settlements.

3 Restraints on the power of testamentary alienation in the United States: (a) As to persons who may alienate by will; (b) as to persons to whom alienation by will may be made; (c) as to what kind of property, and what amount of one's property, may be alienated by will; (d) as to objects of alienation. And herein of unlawful accumulation; trusts for illegal, immoral, superstitious or absurd uses. How far public policy (independently of statutory restraints) will defeat the intention of a testator.

#### PREPARATION FOR TRIAL

By Austin Abbott, LL. D.

*Pleadings* — Inquiry what is the cause of action, how answered. Denials: (a) positive; (b) of knowledge or information sufficient, etc.; (c) on information, etc.; (d) general and specific. New matter in avoidance, how distinguished from denial and from counter claim; Technical rules as to form of pleadings, resting on convenience of use. Marking for the court.

*Facts* — Object of a brief of the facts. Allegations: (a) unquestionably denied; (b) unquestionably admitted; (c) not clearly denied or admitted; Facts not in the pleadings; Modes of proof; Choice between documentary evidence and testimony; between witnesses; Briefs of testimony; Order of interrogation; Brief of documents; General order of proof.

#### EXAMINATION OF TITLES TO REAL ESTATE

By Hon. Myer S. Isaacs

1 The contract, its execution and effect; Rights and remedies of vendor and vendee; When time is of the essence of the contract; The deed.



2 Method of examination of title ; The records and searches ; Duty of conveyancers as to questions of fact and the suggestions of legal objections ; Closing the title ; Preparing abstract.

## REQUIREMENTS FOR GRADUATION

The degree of bachelor of laws is conferred on candidates who have pursued all the studies of the course, have passed the necessary examinations and are of good moral character. The examinations are both written and oral, and are conducted by the faculty and committees of the Alumni and members of the bar.

## BUILDINGS

See University of the City of New York, Department of Arts and Sciences, p. 666.

## UNION UNIVERSITY

### ALBANY LAW SCHOOL

*239 State st., Albany*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
17 Ap	1851	Legislature incorporated University of Albany.
21 Ap	"	Law School organized under name of law department of Albany University.
	"	Unsuccessful attempt made to establish a department of scientific agriculture.
12 Ap	1859	Act passed constituting faculty of Albany Law School a committee for examination for graduation, and those receiving diplomas were entitled to practice in the courts of this state.
10 Ap	1873	Albany Law School included in Union University and name changed to Albany Law School.
5 Je	1877	Above act of 1859 repealed so far as related to privilege last named.

## TRUSTEES

President, Hon. William L. Learned	Albany
Secretary, Charles J. Buchanan	"
Hon. George Barker	Fredonia
Irving Browne	Albany

Hon. George F. Danforth, LL. D. ....	Middleburgh
Hon. Charles C. Dwight ...	Auburn
Hon. Matthew Hale, LL. D. ....	Albany
Marcus T. Hun .....	"
Hon. Judson S. Landon, LL. D. ....	Schenectady
Charles B. Lansing .....	Albany
Joseph M. Lawson .....	"
Charles C. Lester .....	Saratoga Springs
Charles H. Mills .....	Albany
Dudley Olcott .....	"
Gen. Amasa J. Parker .....	"
Hon. Rufus W. Peckham .....	"
Hiram E. Sickels .....	"
Hon. James C. Smith .....	Canandaigua
Seymour Van Santvord .....	Troy

### ADMINISTRATION

Figures in column at left give first year of service in Albany Law School.

1888 President of the University, Harrison E. Webster, LL. D.

See also Union College.

1873 President of the Law School, Hon. William L. Learned,  
LL. D. 298 State st.

B. A. Yale 1841, M. A. 1847, LL. D. 1878; Editor Earles' Micro-  
cosmography, Madam Knight's journal.

1889 Dean and Treasurer, George W. Kirchwey, B. A.

B. A. Yale.

### INSTRUCTION

Figures in column at left give first year of service in Albany Law School and years  
spent in teaching.

1873 Hon. William L. Learned. President and Professor of  
Equity Jurisprudence.

See also "Administration."

1889 George W. Kirchwey. Dean and Professor of Jurisprudence,  
Contracts and the Law of Corporations.

See also "Administration."

Hon. Matthew Hale, LL. D. Professor of the Law of Per-  
sonal Rights and Torts.

Charles T. F. Spoor. Professor of Common Law and Code  
Practice and Pleading.

1874 Hiram E. Sickels. Professor of the Law of Evidence and  
15 Sources of Municipal Law, 38 State st.

Published New York reports after vol. 45.

Irving Browne. Professor of the Law of the Domestic Relations and Criminal Law.

Hon. Judson S. Landon, LL. D. Professor of American Constitutional History and Law.

James W. Eaton, jr, B. A. Professor of the Law of Real Property and Wills.

Educated at Yale.

1880 Nathaniel C. Moak. Lecturer on Books and Judicial Systems.

41 Editor Clarke's chancery reports, 1869, Moak's Van Santvoord Pleadings, 1873, Moak's English Reports, 1872-84, Moak's Underhill on torts, 1881.

1885 Maurice J. Lewi, M. D. Professor of Medical Jurisprudence, 71 Lancaster st.

M. D. Albany Medical College; Formerly lecturer spring course Albany Medical College on diseases of women and children; President Albany Academy of Medicine 1882, Albany County Medical Society 1890; Member Albany Institute, Medical Society of the State of New York; Secretary committee on legislation Medical Society of the State of New York 1889-; Author of monographs on diseases of women and children and on higher medical education.

#### VACANCIES

Hon. Horace E. Smith, LL. D. Dean. Resigned 1889.

#### APPOINTED DURING YEAR

George W. Kirchwey, B. A. Dean. 1889.

James W. Eaton, jr, B. A. Professor of the law of real property and wills. Je 1889.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

Valedictory,	Harold L. Hooker	Watertown
Salutatory,	William De Graff	Rochester
Orations,	John F. Nash	Plattsburgh
	John W. Saxe	Troy
	Dow Vroman	Middleburgh

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

(None)

#### REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course extends over two years of nine months each. The work of the first or junior year is largely elementary in its character and is intended to take the place of the year of preliminary work heretofore required of applicants for admission to the school. The second or senior year is an expansion of the courses of study hitherto pursued in the school, covering somewhat more ground and aiming to do it more thoroughly. The whole course is intended to afford a thorough acquaintance with and training in the fundamental principles of English and American law, so as to fit the graduates of the school for the practice of the profession in any state or country where that law prevails.

The regular courses of study will be varied in the discretion of the faculty. The optional courses will be conducted by lecturers and instructors to be announced from time to time, and additional courses will be provided as may be required.

Lectures, in connection with the use of text-books and reported cases, recitations, oral and written examinations and moot courts, constitute the principal means of instruction and training in the school. The methods employed vary according to the subject and the instructor, but the end sought to be attained is in all cases the same. This object is to teach the law practically, as it is held and administered to-day by the courts of England and the United States, but at the same time to deal with it rationally and historically, exhibiting the present rule as a normal development or abnormal variation, as the case may be, from the logical and historical rule. By this means it is intended to induce the method and habit of legal reasoning, as well as to afford a sound basis of legal knowledge, sufficient for the practice of law in any state or country where the common law prevails.

Special attention is paid to the law of the state of New York and of those jurisdictions which follow the lead of this state; not, however, to the neglect of other systems.

Much of the instruction, especially in the senior year, is afforded by the study and discussion of carefully selected English and American cases, previously assigned to the class. It is believed that this method, judiciously employed, is incomparably the best, if not the only existing means of stimulating and keeping alive



the interest of student and instructor alike, and of bringing the highest efficiency of both to bear upon the work in hand.

Essays on legal topics, and briefs on disputed points of law are required of all students at the end of junior year and in each term of senior year. These will be examined and criticised by members of the faculty.

The regular work of the school is supplemented by numerous voluntary clubs formed by the students for the trial, argument and discussion of causes and for practice in pleading and forensic debate. The formation of these clubs is encouraged by the faculty and their work is often supervised and directed by the professors.

Examinations are frequent throughout the course. A portion of each lecture hour is usually devoted to a "quiz" or oral examination of the class. The junior class is examined weekly, or oftener, as its work progresses. An oral examination is held by each instructor at the conclusion of his course of lectures, and stringent written examinations are held at the close of each term.

## SYNOPSIS OF THE COURSE OF STUDY

### JUNIOR YEAR

Elementary law, recitations; Contracts, lectures and recitations; Domestic relations, lectures and recitations; Criminal law, lectures; Torts, lectures and recitations; Personal property, recitations; Sources of municipal law, lectures.

### SENIOR YEAR

Jurisprudence, lectures; Contracts, lectures and discussions; Commercial law, lectures and discussions; Corporations, lectures; Equity jurisprudence, lectures; Real property and wills, lectures and discussions; Practice and pleading, lectures and recitations; Evidence, lectures; Constitutional law, lectures.

In addition to the above, instruction is afforded by text-books and lectures, in the following optional subjects:

Federal jurisprudence, shipping and admiralty corporate trusts, patent law, Roman law, medical jurisprudence, trial of cases, codes and codification, legal ethics, books and judicial systems.

Members of the junior class are not, without special permission, allowed to attend the lectures and other exercises of the senior year: but members of the senior class, whether they have

spent the previous year in the law school or not, are encouraged, as far as is compatible with their special duties, to attend the lectures of the junior year.

Moot courts for the trial and argument of causes are held each week during the senior year. These courts are presided over by a member of the faculty and are intended to afford to each member of the senior class several opportunities of trying and arguing causes in the course of the year. Members of the junior class are allowed to attend these courts.

The regular instruction afforded covers 12 exercises a week during the junior year and 15 a week during senior year. Attendance is required of all students who are candidates for a degree.

Candidates for honors are required, in addition to the foregoing, to take at least two hours a week during the senior year, in some of the optional courses.

### REQUIREMENTS FOR GRADUATION

The degree of bachelor of laws is conferred on students who have been in attendance during at least three full terms of the senior year, have faithfully performed all the exercises assigned to them, and have passed satisfactory examinations on the work of the entire course.

Special honors are awarded to students who have distinguished themselves by unusual excellence in the examinations of the junior and senior years, respectively, and who, in addition, have satisfactorily pursued special courses of study under the direction of the faculty.

All persons, not being candidates for a degree, who have pursued courses of study in the school, may be examined in the subjects taken by them, and will, on satisfactorily passing the same, receive a certificate setting forth the time of attendance and the nature and results of such examination.

### BUILDINGS

Main building, two story brick, two class rooms, 300 seats, floor area 3,800 sq. ft., value \$30,000.

## COLUMBIA COLLEGE SCHOOL OF LAW

*Madison av. and 49 st., New York*

For historic sketch and trustees see Columbia College pp. 543-545.

### ADMINISTRATION

Figures in column at left give first year of service in Columbia Law School.

1890 President, Seth Low, LL. D.

See also Columbia College School of Arts.

1858 Warden, Theodore W. Dwight, LL. D. 19 Fifth av.

1878 Secretary, Robert Seuftner, LL. B. 436 Putnam av.,  
Brooklyn.

1883 Assistant Secretary, Ashley H. Auburn, 127 E. 76 st.  
Janitor, James Stanton.

### INSTRUCTION

Figures in column at left give first year of service in Columbia Law School and years spent in teaching.

1858 Theodore W. Dwight, LL. D. Warden and Professor of the  
Law of Contracts and of Maritime and Admiralty Law,  
19 Fifth av.

Benjamin F. Lee, LL. D. Lecturer on Patent Law, 3  
Gramercy park.

B. A. Williams 1858, LL. D. 1887; LL. B. Columbia 1861; Pro-  
fessor of real estate and equity jurisprudence, Columbia  
1883-90; Lecturer on patent law 1890- .

1873 George Chase, LL. B. Professor of Criminal Law, Torts  
18 and Procedure, 371 West End av.

B. A. Yale 1870; LL. B. Columbia 1873; Instructor in municipal  
law 1873-5; Assistant professor of municipal law 1875-8; Pro-  
fessor of criminal law, torts and procedure 1878- ; Member  
American Geographical Society; Assistant editor Johnson's  
New general cyclopaedia; Author Johnson's Ready legal  
adviser, Editor Chase's Blackstone, 1890, Stephen's Digest  
of the law of evidence, 1885.

1876 John W. Burgess, Ph. D., LL. D. Professor of Constitutional  
History, International and Constitutional Law, and Con-  
stitutional Science, 323 W. 57 st.

See also Columbia College, School of Arts.



- 1860 John Ordronaux, LL. D., M. D. Professor of Medical Juris-  
30 prudence, 58 William st.

B. A. Dartmouth 1850, M. A. 1853; LL. B. Harvard 1852; M. D. National Medical College 1859; LL. D. Trinity 1870; Professor of medical jurisprudence, Columbia 1860; Professor of medical jurisprudence, Dartmouth 1864; Professor of physics, pathology and medical jurisprudence, University of Vermont, 1865-73; Emeritus professor 1873; Professor of international law and medical jurisprudence, Columbian University 1865-73; Professor of medical jurisprudence, Boston University 1872; Author Hints on health in armies, 1861, Manual for military surgeons, 1863, Jurisprudence of medicine, 1869, Judicial aspects of insanity, 1879; Translator Regimen sanitates salerie, 1869.

- 1885 Robert D. Petty, LL. B. Professor of Private Law, 41 E.  
6 49 st.

B. A. Princeton 1883, M. A. 1886; LL. B. Columbia 1885; Tutor, Columbia Law School 1885-8; Instructor 1888-90; Professor, 1890- .

- 1887 Alfred Gandy Reeves, LL. B. Prize Fellow, 55 Liberty st.  
4 B. A. Princeton 1884, M. A. 1887; LL. B. Columbia 1887; Prize fellow 1887-90; Lecturer in municipal law 1890-.

- 1888 Philo Perry Safford, LL. B. Prize Fellow, 35 Wall st.  
3 B. A. Oberlin 1885; LL. B. Columbia 1888; Principal Salem (Ohio) High School 1885-6.

- 1889 Edward Foote Dwight LL. B. Prize Fellow, 346 Broadway.  
2 B. L. University of Wisconsin 1887; LL. B. Columbia 1889.

Frank Drisler, M. A. Examiner for admission to the law school, 15 E. 49 st.

- 1890 William A. Keener, LL. B., M. A. Professor of Private Law.  
8 B. A. Emory College 1874, M. A. 1877; LL. B. Harvard 1877; Assistant professor of law, Harvard 1883-8; Story professor of law 1888-90; Author Collection of cases on quasi-contracts.

- 1890 Victor Morawetz, LL. B., M. A. Lecturer on the Law of  
Private Corporations, 121 Madison av.  
LL. B. Harvard 1879; M. A. Columbia; Author Morawetz on private corporations.

- 1890 Hon. Daniel G. Rollins. Lecturer on the Law of Wills.



1890 Harrington Putnam. Lecturer on proceedings *in rem*, 45 William st.

B. A. Colby 1870; LL. B. Columbia 1876; Member Association for Codification and Reform of Law of Nations, London; Corresponding Editor *Revue internationale du droit maritime*, Marseilles, *Annales de droit commercial Français é tranger et international* Paris.

1890 George C. Holt. Lecturer on Federal Jurisprudence.

#### VACANCIES

Benjamin F. Lee, Professor of real estate and equity jurisprudence. Removed 1 J1 1890.

#### APPOINTED DURING YEAR

William A. Keener, LL. B. Professor of private law. Appointed 1 J1 1890.

Robert D. Petty. Professor of private law. Appointed 1 J1 1890.

Victor Morawetz. Lecturer on the law of private corporations. Appointed 1 J1 1890.

Daniel G. Rollins. Lecturer on the law of wills. Appointed 1 J1 1890.

Harrington Putnam. Lecturer on proceedings *in rem*. Appointed 1 J1 1890.

Benjamin F. Lee. Lecturer on patent law. Appointed 1 J. 1890.

George C. Holt. Lecturer on federal jurisprudence. Appointed 1 J1 1890.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

#### REQUIREMENTS FOR ADMISSION

See table 3.

#### COURSES OF STUDY

For the purpose of presenting the subjects of instruction in the various departments with clearness, the professorships may be grouped into three classes, viz.: Those appertaining to municipal law, the professorship of constitutional law, etc., and the professorship of medical jurisprudence.

## MUNICIPAL LAW

In the subjects embraced under this head the methods of instruction are substantially the same, and are designed to afford a complete course of legal education for gentlemen intended for the bar in any of the United States, except in matters of mere local law and practice.

The leading end sought to be accomplished is the thorough and careful training of the student. He is led to look for the leading principles of law without encumbering himself with a search for minor details. To this end he is expected to familiarize himself with definitions, and to become practiced in deducing, from general principles, rules to govern specific cases that are from time to time presented to him. The instruction in the class-room presupposes that he has given careful attention to the subject, and to a certain extent grappled with its difficulties. With this view a topic is assigned to him from some approved text-book. He is questioned on it for the purpose of determining the extent to which he has grasped the principles involved. Accompanying the question is a full oral exposition from the professor in charge of the class, with suitable illustrations from decided cases. It will be observed that this system excludes, in the main, lectures in the ordinary sense. It is rather a system of questions, expositions and dictations. However, in some branches, *e. g.*, criminal law, lectures, as ordinarily understood, are resorted to. But of these lectures a comprehensive synopsis, embracing the general principles of criminal jurisprudence, is dictated to the students, to be preserved for study and reference.

The student is not required to go over the subjects prescribed in the law school curriculum but once, except for purposes of review. Large numbers of the students, however, who have pursued the studies in the junior class, voluntarily, and at the discretion of the faculty, attend exercises of that class during the middle year, in this way hearing the expositions for a second time. This course is found to be highly useful in giving a better appreciation of legal distinctions and fixing leading principles in the memory.

The student is also encouraged, after he has made some acquaintance with general legal rules, to read and carefully study leading cases, so as to observe the application of principles to practical affairs. A large number of students attend law offices, and thus combine practical with theoretical instruction.

*Moot-courts* — The design of these is to aid in training the student to discuss debatable questions of law. It has not been found practicable to make use of these fictitious tribunals for the trial of disputed questions of fact, either with or without a jury. The theory on which they are conducted is that the facts are assumed to be true, and the only subject open to debate is the rule of law to be applied to them. The discussion involves the preparation of written points, in which the rules of law are stated under appropriate divisions and sustained by authorities, and the oral exposition of such points before classmates and a presiding professor. The brief, when properly prepared, is practically identical with one suitable for argument in an appellate court. Six or eight students are selected to conduct the argument, after which the case is closed by a decision from the presiding professor, given a week subsequently. A special instructor is provided to give instruction in the preparation of briefs and the proper use to be made of legal authorities.

These discussions are strongly recommended to students. They serve as a direct training for regular work in the profession. It is found that large numbers of graduates of colleges attending the school have had little or no experience in oral discussion. Success in this direction is, however, of the greatest consequence to the practitioner. Many young men, for the first time in their lives, resort in these courts to oral argument, overcome in the presence of their classmates their natural diffidence, and are ready for the transaction of actual business when it comes to them. Students who are not assigned to take part in the discussion find it of great importance to study the case with care, and thus to prepare themselves for an intelligent appreciation of the arguments made in their hearing.

Two moot-courts are held each week, and printed slips containing the case to be discussed are given out in advance to the whole body of students.

The trustees of the college have established a series of prize tutorships. It is a part of the official duty of the tutors to question the students upon subjects already studied, with a view to fixing leading topics in the memory. This exercise is found to be very useful, and is highly valued by the students. Two evenings per week are devoted to these exercises.



## MEDICAL JURISPRUDENCE

In this department, the object is to show the relations between the great departments of medicine and law, and the points at which these sciences touch each other. This is done solely through the medium of lectures, on which no examinations are held. The course embraces the following subjects: medical jurisprudence, including personal and medical relations, physically considered; poisons, wounds and exceptional forms of death; insanity, and its bearings, civil as well as criminal, on legal responsibility; malpractice on the part of physicians and surgeons; medical evidence, coroners' courts, life insurance and survivorship. A preliminary course of lectures on anatomy is also delivered by the professor.

*Third year's course*

The object of this year's course is twofold: First, to establish elective courses; and second, in the department of private law, where that is elected, to broaden and make more definite the knowledge obtained in the first two years.

The subject will, from these points of view, be considered under two divisions.

*Division 1*—Third year's course in private law:

It is plain that the course of the first two years can supply to the student only an outline of this vast subject; still, no more than is done can be well and thoroughly accomplished in the time allotted to the subject. Experience shows that exposition more than once repeated, review, and constant examination are needful to lodge firmly in the student's mind even the most elementary principles.

In fixing upon the topics to be assigned to this year, an earnest effort has been made to select those that were most useful.

From this point of view, the following topics have been included in the third year's course:

1—Elements of our jurisprudence, with the relations of the law of the United States and of the various states of the Union to the common law of England, in its various branches, and to statutes.

2—The law of private corporations.

3—The law of wills, with reference to questions of interpretation and construction.



4 — The law of negotiable paper and of insurance, in greater detail than in the earlier part of the course.

5 — The development with greater fulness, of certain common law writs: (a) Habeas corpus, (b) Certiorari, in its various forms, (c) Mandamus, (d) Information, in the nature of *quo warranto*, (e) Prohibition, (f) Equity practice, as to writs of injunctions and as to receivers.

6 — Lectures on the constitution of the United States; also federal jurisprudence, in reference to the jurisdiction of courts, as well as the removal of causes from a state to a federal court, and the remanding of them.

7 — International private law, with special reference to the law of domicil.

8 — Proceedings *in rem*,

9 — Patent law.

10 — Practice court.

*Division 2* — Alternative and elective course of international and public law and comparative jurisprudence.

1 — Constitutional and administrative law: (1) Comparative constitutional law of the principal European states and of the United States, (2) Comparative constitutional law of the several commonwealths of the American union, (3) Comparative administrative law of the principal European states and of the United States — (a) General part, (b) Special part, (4) Local government, (5) Municipal administration.

2 — History and treatment of European law and comparative jurisprudence: (1) Primitive law, (2) Comparative jurisprudence, (3) International private law, (4) Seminarium for studies, etc.

3 — Diplomacy and international law: (1) The history of diplomacy, (2) International law.

4 — Canon law.

#### SYNOPSIS OF STUDIES

*First year* — Elementary law and contracts; Real estate; Constitutional history of Europe; Instruction in the preparation of legal briefs; Redress of private wrongs; Quiz.

*Second year* — Equity jurisprudence; Torts; Evidence; Code of civil procedure or common law and equity pleading; Admiralty, shipping and insurance; Criminal law; Medical jurisprudence; Review of contracts and real estate; Comparative constitutional law; Instruction in the preparation of briefs; Quiz.

## REQUIREMENTS FOR GRADUATION

The examinations for degrees extend over all the studies of the course.

The degree of bachelor of laws is conferred on such students as have pursued, to the satisfaction of the trustees of the college and the faculty, the entire course of study, and have passed the required examinations.

Students who are at present candidates for a degree, and who have added to the study of municipal law the courses of instruction and recitation on constitutional history and constitutional law, diplomatic history and international law, in their prescribed order, and shall pass approved examinations therein, receive the degree of bachelor of laws, *cum laude*. As to all other persons except those who are mentioned under the heading of "prizes" this rule is discontinued.

If a student at the time of graduation has not attained the age of 21 years, the delivery of his diploma shall be deferred till he attains that age.

When a person remains connected with the school for a period not entitling him to graduate, he may, on application to the warden, receive, instead of a diploma, an official certificate of attendance, which states the time of his attendance and the facts of his regular standing in his class.

## BUILDINGS

(Facts not reported.)

## CORNELL UNIVERSITY

### SCHOOL OF LAW

*Ithaca*

For historic sketch and trustees see Cornell University, pp. 921-922.

### <sup>1</sup>ADMINISTRATION

President, Charles Kendall Adams, LL. D.

Dean, Hon. Douglass Boardman, M. A.

Secretary, Harry B. Hutchins, Ph. B.

<sup>1</sup>For academic degrees, positions held, etc. see for each name facts given under Cornell University, pp. 923-940.

## INSTRUCTION

Harry B. Hutchins, Ph. B. Professor of Law.

Charles A. Collin, M. A. Professor of Law.

Francis M. Burdick, LL. B., M. A. Professor of Law.

Moses Coit Tyler, LL. D. Professor of American Constitutional History and Law.

Herbert Tuttle, M. A. Professor of International Law and of English Constitutional History.

## LECTURERS

Hon. Francis M. Finch, LL. D.	New York
Hon. Daniel H. Chamberlain, LL. D.	"
Hon. Benjamin F. Thurston	Providence
George S. Potter	Buffalo
Albert H. Walker, LL. B.	Hartford
Marshall D. Ewell, M. D., LL. D.	Chicago
Hon. Orlow W. Chapman	Binghamton
Hon. Goodwin Brown	Albany

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Thesis prizes	Value \$100
First, John Tracy Morrison, B. A., Ithaca	
Second, Charles Hazen Blood, Ph. B., Ithaca	
Third, Walter Jones Hamilton, Ph. B., Cleveland	

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course is a graded one and extends through two years of nine months each. The regular class instruction at the school is at no time less than 15 hours per week.

*University court*—A session of the university court is held, as a rule, each week during the school year. The resident members of

<sup>1</sup>For academic degrees, positions held, etc. see for each name facts given under Cornell University, pp. 923-940.

the law faculty constitute the court, and sit together for the hearing of causes. All opinions of the court are in writing, and are placed on file in the law library.

The hearings in this court are conducted on the hypothesis that certain facts are true, the only questions open to discussion being the principles of law that should be applied to the facts. The student having obtained from the faculty a statement of facts, is required to prepare pleadings and to draw up a brief in which the principles of law applicable to the case must be clearly stated under appropriate divisions, and sustained by the citation of such authorities as he intends to rely on in the oral argument. The pleadings are submitted to the professor having in charge the subject of pleading and procedure, who calls attention to such errors as may exist, and gives such practical information as he may deem advisable.

The effort of the faculty is to make practical lawyers, to teach both the principles of the law, and how to apply them. To this end, the university court is made the forum for the discussion of such practical questions as most frequently arise in a professional career at the bar; and, so far as it can be used for that purpose it is made a means of familiarizing the student with matters of pleading and practice and with the general routine of court work.

*Examinations and theses* —At the end of each term the members of both classes are subjected to oral and written examinations on the work of the term. Promotion of the student to full standing in his class at the subsequent term is dependent on the manner in which he passes the examinations on the subjects of the previous term. The faculty do not hesitate to drop a student from the rolls at any time during the year on becoming satisfied that such student is neglecting his work and is not complying with the requirements of the school.

## SYNOPSIS OF STUDIES

### *Junior year*

Elementary law; Contracts, including agency; Criminal law and procedure; Torts; Domestic relations; The law of real property; Evidence; Common law pleading and practice in cases at law; Civil procedure under the codes; English constitutional history.



*Senior year*

Private and municipal corporations ; Wills and administration ; Mercantile law, including bills, partnership, sales, suretyship, etc; Evidence ; The law of real property ; Equity jurisprudence ; Equity pleading and procedure in State and in United States Courts ; Civil procedure under the codes ; Practical suggestions concerning the preparation, trial and argument of causes ; Roman law ; International law ; American constitutional history ; American constitutional law.

## COURSES OF SPECIAL LECTURES

Lectures on the following subjects are given by the non-resident members of the faculty :

The statute of frauds and fraudulent conveyances ; The Executive — its place and powers under the constitution ; Law of shipping and admiralty and the law of marine insurance ; Patent laws of the United States ; Medical jurisprudence ; Law of life insurance ; Extradition.

## REQUIREMENTS FOR GRADUATION

Students who have received the full course of instruction, performed all required exercises, and passed the regular examinations, are admitted to the degree of bachelor of laws. Students admitted to advanced standing are entitled to all the privileges of the class of which they become members.

## BUILDINGS

See Cornell University, p. 1002.

## NIAGARA UNIVERSITY

## BUFFALO LAW SCHOOL

*Ellicott st., Buffalo*

For historic sketch see Niagara University, p. 782.

## TRUSTEES

There are no trustees, the management being wholly under control of the faculty.

## ADMINISTRATION

Figures in column at left give first year of service in Buffalo Law School.

1888 Dean, Hon. Charles Daniels, LL. D.

1887 Vice-Dean, Le Roy Parker, M. A.

B. A. Hamilton 1865, M. A. 1868.

1887 Secretary and Treasurer, E. Corning Townsend, LL. B., 686 Main st.

LL. B. Albany Law School 1883; Author The statute of distribution, 1888.

1887 Registrar, Charles P. Norton, B. A., Saturn club, Delaware av. and Edward st.

B. A. Harvard 1880, Director Buffalo Library 1884-87.

## INSTRUCTION

Figures in column at left give first year of service in Buffalo Law School and years spent in teaching.

1888 Hon. Charles Daniels, LL. D. Dean and Professor of Constitutional Law.

1887 Le Roy Parker, M. A. Vice-Dean and Professor of the Law of Contracts and Private Rights.

See also "Administration."

1889 Hon. Charles Beckwith, M. A. Professor of Equity Jurisprudence, 253 Franklin st.

B. A. University of Michigan 1849, M. A. 1853.

1888 Hon. George S. Wardwell, B. A., LL. B. Professor of the Law of Torts.

B. A. Harvard 1853, LL. B. 1855.

1877 Hon. Albion W. Tourgee, LL. D. Professor of Legal Ethics.

B. A. University of Rochester 1862, M. A. 1864, LL. D. 1880; Judge of superior court, North Carolina 1868-75; Member Constitutional Convention of North Carolina 1868 and 1875, Code Commission of North Carolina 1868-72; Author The code with notes and decisions, 1876, Digest of cited cases, 1878, A royal gentleman, 1874, Figs and thistles, 1879, A fool's errand, 1879, Bricks without straw, 1880, John Eax (and Mamelon), 1882, Hot plowshares, 1883, An appeal to Cæsar, 1884, Black ice, 1885, Button's inn, 1886, The veteran and his pipe, 1887, Letters to a king, 1888, With Gauge and Swallow attorneys, 1889, Pactolus Prime, 1890; Editor Our continent magazine, 1882-4.

- 1889 Spencer Clinton, Professor of the Law of Property, 58 John-  
3 son pl.  
James Frazer Gluck. Professor of the Law of Corporations.  
B. A. Cornell 1874; Vice-President State Bar Association.
- 1888 George Clinton, LL. B. Professor of Maritime Law and  
2 Admiralty, 175 Plymouth av.  
LL. B. Columbia 1868.
- John G. Milburn. Professor of the Theory of Law Codes  
and Codification, 28 Erie st.  
Member New York State Bar Association.
- Adelbert Moot. Professor of the Law of Evidence.  
LL. B. Albany Law School 1876; Member State Bar Association,  
American Bar Association of the U. S., American  
Economic Association.
- 1888 Tracy C. Becker, B. A., LL. B. Professor of Criminal Law  
5 and Procedure and Medical Jurisprudence, 23 W. Eagle st.  
B. A. Union 1874, LL. B. 1876; Chairman executive committee  
New York State Bar Association.
- 1887 Charles P. Norton. Registrar and Professor of the Law  
8 and Practice of Civil Actions.  
See also "Administration."
- 1887 E. Corning Townsend. Secretary and Treasurer and Pro-  
3 fessor of Domestic Relations.  
See also "Administration."
- 1887 Carl T. Chester, B. A., LL. B. Professor of Marriage and  
Divorce and Special Proceedings, 298 Main st.  
B. A. Yale 1875; LL. B. Columbia 1877.

## SPECIAL LECTURERS

Hon. Loran L. Lewis	Hon. Edward W. Hatch
Hon. Jacob Stern	Henry H. Seymour
George Gorham	E. Lewellyn Parker
Charles B. Wheeler	Frederick Almy
Charles Hallam Keep	

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Daniels scholarships, James L. Quackenbush, Syracuse....	\$150
Frederick Haller, Buffalo.....	100
Clinton scholarships, Frederick H. Sylvester, Sinclairville..	150
John F. Dee, Buffalo.....	100

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course of instruction to be followed will occupy two years. Each year will be divided into two terms of 17 weeks each; beginning the first week in October, and closing the last week in May. A detailed statement of the arrangement of lectures and recitations, with the hours to be occupied by particular instructors and lecturers, will be printed and distributed at the opening of the year, together with information as to the text-books to be used. Recitations in class, daily quizzes, and the discussion of subjects treated of in the lectures, will be conducted by the professors and by the lecturers on special topics.

*Moot courts* — The practical details of the prosecution of actions at law will be taught in moot courts, presided over by one of the professors or instructors. Cases involving questions at law will be assigned by the professors, in which the students will prepare the proper pleadings for action and defence, and prepare briefs of the points of law relied upon to sustain the case, with citations to such authorities as may be thought to sustain the position taken. The cases will be argued orally by the students to whom they are assigned. In this connection instruction will be given in the method and manner of forensic discussion.

## SYNOPSIS OF STUDIES

*Junior year* — Elementary law and contracts; Criminal law and procedure; Law of torts; Practice in civil actions; Marriage and divorce; Domestic relations; Transmission of estates.

*Senior year* — Law of property; Law of evidence; Equity jurisprudence and pleading; Law of sales; Agency and partner-



ship; Corporations; Law of negotiate bills and notes; Medical jurisprudence; Maritime and admiralty laws; Constitutional law; Legal ethics; Trial of actions; Special proceedings; Manufacturing corporations; Wills and estates of deceased persons.

### REQUIREMENTS FOR GRADUATION

Students who have followed the prescribed course of study, and satisfactorily passed the final examinations, receive the degree of bachelor of laws.

### BUILDINGS

The law school occupies one lecture room in the Buffalo library, at the annual rental of \$150.

## COLUMBIA COLLEGE

### COLLEGE OF PHYSICIANS AND SURGEONS

*W. 59 st., New York*

For historic sketch see Columbia College, p. 543.

### TRUSTEES

President, James Woods McLane, M. D. . . . . 51 W. 38 st.  
 Treasurer, George Bliss . . . . . 28 Nassau st.  
 Secretary and Registrar, George G. Wheelock, M. D. 75 Park av.  
 Thomas Masters Markoe, M. D., ex-officio  
 Alonzo Brayton Ball, M. D.  
 Joseph Hodges Choate  
 Thomas Ferris Cock, M. D.  
 Frederick Augustus Conkling  
 William Henry Draper, M. D.  
 Ellsworth Elliot, M. D.  
 William Warner Hopper, jr  
 Samuel Thomas Hubbard, M. D.  
 Morris Ketchum Jesup, M. D.  
 Edward Mitchell  
 Willard Parker, M. D.  
 George Absalom Peters, M. D.

Rt. Rev. Henry Codman Potter, LL. D., S. T. D.  
 Robert George Remsen  
 James Alfred Roosevelt  
 Gilbert Macmaster Speir  
 Theodore Gaillard Thomas, M. D.  
 Cornelius Vanderbilt

## VACANCIES

F. A. P. Barnard, LL. D., died  
 John J. Crane, M. D., died  
 James T. Smith, died

## ADMINISTRATION

Figures in column at left give first year of service in College of Physicians and Surgeons.

1868 President, James Woods McLane, M. D., 51 W. 38 st.

B. A. Yale 1861; Professor of materia medica and therapeutics, College of Physicians and Surgeons 1868-72, Professor of obstetrics 1872.

1860 Vice-President, Thomas Masters Markoe, M. D.

B. A. Princeton 1837; M. D. College of Physicians and Surgeons 1842; Author A work on diseases of the bones.

Treasurer, George Bliss, 28 Nassau st.

1885 Secretary, George Montgomery Tuttle, B. A., M. D., 49 W. 38 st.

B. A. Yale 1877; M. D. College of Physicians and Surgeons 1880; Physician in chief, Emigrant Hospital, Ward's Island 1881-3; Assistant to chair of obstetrics and gynecology, College of Physicians and Surgeons 1883-4; Adjunct lecturer on obstetrics and gynecology 1884-5; Attending physician, DeMilt Dispensary 1884, Bellevue Hospital 1885-9; Attending gynecologist, Roosevelt 1888-; Attending surgeon, New York Cancer Hospital 1888-; Professor of gynecology, College of Physicians and Surgeons 1885-.

Clerk of the College, Edward Thomas Boag.

Executive Manager, Henry William Van Wagenen.

## INSTRUCTION

Figures in column at left give first year of service in College of Physicians and Surgeons and years spent in teaching.

1868 James Woods McLane, M. D. President and Professor of  
 23 Obstetrics.

See also "Administration."

- 1860 Thomas Masters Markoe, M. D. Vice-President and Emeritus Professor of Surgery.

See also "Administration."

William Detmold, M. D. Emeritus Professor of Clinical and Military Surgery.

Theodore Gaillard Thomas, M. D. Emeritus Professor of Obstetrics and Gynecology.

John Thomas Metcalfe, M. D. Emeritus Professor of Clinical Medicine.

Charles Frederic Chandler, Ph. D. Professor of Chemistry and Medical Jurisprudence.

Edward Curtis, M. D. Emeritus Professor of Materia Medica and Therapeutics.

- 1876 Francis Delafield, M. D., LL. D. Professor of Pathology and Practical Medicine, 12 W. 32 st.

B. A. Yale 1860, LL. D. 1890; M. D. College of Physicians and Surgeons 1863, Adjunct professor of pathological and practical medicine 1876-82; Author Studies in pathological anatomy, Handbook of pathological anatomy.

- 1870 John Green Curtis, M. A., M. D. Professor of Physiology,  
21 127 E. 35 st.

B. A. Havard 1866, M. A. 1869; M. D. College of Physicians and Surgeons 1870; Assistant demonstrator of anatomy 1870-1; Demonstrator of anatomy 1871-5; Lecturer on injuries and diseases of arteries, summer sessions 1873-4, Adjunct lecturer on physiology 1875-6; Adjunct professor of physiology 1876-83; Member American Physiological Society.

- 1885 George Montgomery Tuttle, B. A., M. D. Professor of Gynecology.

See also "Administration."

- 1884 George Livingston Peabody, M. D. Professor of Materia  
13 Medica and Therapeutics, 57 W. 38 st.

B. A. Columbia 1870, M. A. 1873; M. D. College of Physicians and Surgeons 1873; Clinical lecturer on medicine 1884-7; Professor materia medica and therapeutics 1887-; Member Association of American Physicians; Attending physician, Bellevue and St Luke's hospitals.

- 1879 William Tillinghast Bull, M. D. Professor of Surgery.

11 B. A. Harvard 1869, M. A. 1872; M. D. College of Physicians and Surgeons 1872; Demonstrator of anatomy 1879-90;

- 1888 Edward Lasell Partridge, M. D. Adjunct Professor of Obstetrics, 19 Fifth av.

M. A. Williams 1880; M. D. College of Physicians and Surgeons 1875; Professor of obstetrics, New York Post-Graduate Medical School 1884-5; Author Manual of obstetrics, 1884; American editor Practical manual of obstetrics, (Verrier).

- 1887 Moses Allen Starr, M. D. Professor of Diseases of the  
7 Mind and Nervous System, 22 W. 48 st.

B. A. Princeton 1876, M. A. 1879, Ph. D. 1884; M. D. College of Physicians and Surgeons 1880; Professor of diseases of the nervous system, New York Polyclinic 1884-7; Clinical professor of diseases of the mind and nervous system, College of Physicians and Surgeons 1887-9; Member American Neurological Association, Association of American Physicians; Author Familiar forms of nervous diseases, 1890.

- 1886 George Sumner Huntington, M. D. Professor and Demon-  
5 strator of Anatomy, 50 E. 73 st.

B. A. Trinity 1881, M. A. 1884; M. D. College of Physicians and Surgeons 1884; Assistant surgeon Roosevelt Hospital 1886-90; Bellevue Hospital 1888-9; Chief of surgical clinic, Vanderbilt clinic 1887-9; Assistant demonstrator of anatomy, 1886-9, Demonstrator of and lecturer on anatomy, 1889-90.

William Henry Draper, M. D. Professor of Clinical Medicine.

- 1870 Abraham Jacobi, M. D. Clinical Professor of the Diseases of  
30 Children.

M. D. University of Bonn; Professor of the diseases of children, New York Medical College 1860-5; Clinical professor, University Medical Department 1865-70; Member New York State Medical Society; Author Dentition and its derangements, 1862, Infant Diet, 1872, Treatise on diphtheria, 1880.

Fessenden N. Otis, M. D. Emeritus Professor of Genito-Urinary Diseases.

- 1875 George Morewood Lefferts, M. A., M. D. Clinical Professor of  
19 Laryngology and Diseases of the Throat, 6 W. 33 st.

M. A. Dickinson College 1869; M. D. College of Physicians and Surgeons 1870; Resident Physician, St Luke's Hospital 1870-1; Chief of Clinic, University of Vienna 1872-3; Instructor in Laryngology, College of Physicians and Surgeons 1875-6; Consulting Laryngoscopic Surgeon St Luke's Hospital 1877, New York Skin and Cancer Hospital 1882, Out-Door Patient Department Bellevue Hospital 1886; Fellow American Laryngological Association.



- 1880 George Henry Fox, M. A., M. D. Clinical Professor of Dis-  
12 eases of the Skin, 18 E. 31 st.

B. A. University of Rochester 1867, M. A. 1870; M. D. University of Pennsylvania 1869; Professor of dermatology, New York Post-Graduate Medical School 1887-9; Member American Dermatological Association; Fellow American Academy of Medicine; Member New York State Medical Society; Author Photographic illustrations of skin diseases, 1880, Photographic illustrations of cutaneous syphilis, 1881, The use of electricity in the removal of superfluous hair and in the treatment of various facial blemishes, 1885; Editor Illustrated medicine and surgeons, 1882-3.

- 1878 Theophile Mitchell Prudden, M. D. Director of the Labor-  
13 atory of the Alumni Association, and Curator of the Museum, 437 W. 59 st.

Ph. B. Yale 1872, M. D. 1875; Instructor in chemistry 1873-4; Lecture on normal histology, Medical Department 1881-6; Author Manual of normal histology, Story of the bacteria, Dust and its dangers, Water and ice supplies; with Dr F. Delafield, Handbook of pathological anatomy and histology.

- 1882 Robert Fulton Wier, M. D. Clinical Professor of Surgery,  
9 37 W. 33 st.

B. A. College of the City of New York 1854, M. A. 1858; M. D. College of Physicians and Surgeons 1859; Member American Surgical Society.

- 1872 Albert Henry Buck, M. D. Clinical Professor of Diseases  
6 of the Ear, 19 E. 38 st.

B. A. Yale 1864; M. D. College of Physicians and Surgeons 1867; Instructor in otology 1872, Clinical professor of the diseases of the ear 1887-; President of the American Otological Society 1879; Editor American Journal of Otology, 1879, Strickler's manual of histology, 1873, Flemssen's cyclopedia of medicine, 1874-81, Treatise on hygiene and public health, 1879, Reference handbook of the medical sciences, 1885-89; Author Diagnosis and treatment of diseases of the ear, 1880, Manual of diseases of the ear, 1889; Translator, (with Dr Normand Smith) of Helmholtz's Mechanism of the ossicles of the ear and membrana tympani, 1873.

- 1888 Herman Knapp, M. D. Professor of Ophthalmology, 25  
30 W. 24 st.

B. A. Weilburg 1851; M. D. Giessen 1854; Lecturer Heidelberg 1860-; Professor of ophthalmology, Heidelberg 1864-8; University Medical College 1883-8; Founder New York Ophthalmic and Aural Institute; Professor ophthalmology University Medical College 1883-8; Editor Archives of ophthalmology and otology; Author Intraocular tumors, 1868, Hospitals, especially Eye-clinic, 1864, Cocaine and its use in ophthalmic and general surgery, 1885.

- 1890 Robert William Taylor, M. D. Clinical Lecturer on Venereal  
19 Diseases.

M. D. College of Physicians and Surgeons 1868; Professor of Venereal and Skin Diseases, University of Vermont 1876-; Member American Association of Genito-Urinary Surgeons and American Dermatological Association; Corresponding member Société Française de Dermatologie et de Syphilographie; Author Clinical atlas of venereal and skin diseases, 1888; Joint author, The pathology and treatment of venereal diseases.

- 1884 Frank Hartley, M. D. Instructor in Operative Surgery and  
7 Clinical Lecturer on Surgery, 7 W. 31 st.

B. A. Princeton 1877; M. D. College of Physicians and Surgeons 1880, Bellevue Hospital Medical College 1882; Assistant demonstrator of anatomy, College of Physicians and Surgeons 1884-9, Instructor in operative surgery 1889-, Lecturer on surgery 1887-; Visiting Surgeon, Bellevue Hospital 1887, New York Cancer Hospital 1889; Assistant Surgeon, Roosevelt Hospital 1886.

James West Roosevelt, M. D. Clinical Lecturer on Medicine.

Francis Hartman Markoe, M. D. Clinical Lecturer on Surgery.

- 1887 Charles Ernest Pellew, M. E. Demonstrator of Chemistry  
6 and Physics.

M. E. Columbia School of Mines 1884; Assistant in medical chemistry, College of Physicians and Surgeons 1887-90; Author Lessons in medical chemistry for laboratory use, 1889.

- 1887 Bern Budd Gallaudet, M. D. Assistant Demonstrator of  
4 Anatomy and Clinical Lecturer on Surgery, 136 W. 34 st.

B. A. Trinity, 1880, M. A. 1883; M. D. College of Physicians and Surgeons 1884; Second assistant demonstrator of anatomy 1887-9, First assistant 1889-; Chief of surgical clinic, Vanderbilt clinic 1889-; Clinical lecturer on surgery 1889-; Visiting surgeon, Bellevue Hospital.

- 1885 George Cornell Freeborn, M. D. Instructor in Normal  
6 Histology, 18 E. 41 st.

M. D. 1873; House Surgeon, St Michael's Hospital, Newark 1874-9; Assistant surgeon, New York Eye and Ear Infirmary 1881-4, Surgeon 1884-5; Pathologist, New York Cancer Hospital 1888, Women's Hospital 1889.

Ira Thompson Van Gieson, M. D. First Assistant in Normal Histology.

- 1887 Eugene Hodenpyl, M. D. First Assistant in Pathology.  
4 M. D. College of Physicians and Surgeons 1885; Pathologist, Roosevelt and St Francis Hospitals and Methodist Episcopal Hospital, Brooklyn.
- Timothy Matlack Cheesman, M. D. Assistant in Bacteriology.
- 1888 John Slade Ely, M. D. Assistant in Pathology and Assist-  
3 ant Curator of the Museum, 147 W. 73 st.  
Ph. B. Yale 1881; M. D. College of Physicians and Surgeons 1886; Assistant Pathologist, Bellevue Hospital 1888; Lecturer on histology and pathological anatomy, Woman's Medical College 1890.
- 1889 Walter Belknap James, M. D. Clinical Lecturer on Medi-  
4 cine, 33 W. 39 st.  
B. A. Yale 1879; M. D. College of Physicians and Surgeons 1883.
- 1889 Charles Thorndyke Parker, M. D. Second Assistant Demon-  
3 strator of Anatomy. Clinical Assistant, 46 E. 34 st.  
M. D. 1887; Assistant Attending Surgeon, Chambers Street Hospital.
- 1889 John Burgess Lynch, M. D. Second Assistant in Normal  
2 Histology.  
M. D. University of the City of New York 1886; House Physician and Surgeon, St Francis Hospital 1886-8; Clinical assistant, diseases of children, New York Post Graduate Medical School.
- 1890 Ervin Alden Tucker, M. A., M. D. Instructor in Practical  
2 Obstetrics, 59 st. and 10 av.  
B. S. Amherst 1885, M. A. 1888; M. D. College of Physicians and Surgeons 1889; Resident physician, Sloane Maternity Hospital.
- 1889 Ellsworth Eliot, jr, M. D. Third Assistant Demonstrator  
of Anatomy and Clinical Assistant, 48 W. 36 st.  
B. A. Yale 1884; M. D. College of Physicians and Surgeons 1887.
- 1890 Lucius Wales Hotchkiss, M. D. Fourth Assistant Demon-  
2 strator of Anatomy, 30 E. 35 st.  
B. A. Columbia 1881; M. D. College of Physicians and Surgeons 1884; House surgeon, Bellevue Hospital 1885-6; Assistant surgeon, Roosevelt Hospital Dispensary 1886-; Assistant attending surgeon, Bellevue Hospital 1889-; Professor of anatomy, Woman's Medical College 1889-.
- 1890 Benjamin Farquhar Curtis, M. D. Chief of Clinic, 35 W. 31 st.  
B. A. Columbia 1878; M. D. College of Physicians and Surgeons 1881; Attending Surgeon, St Luke's Hospital and New York Cancer Hospital.



- 1876 David Bryson Delavan, M. D. Chief of Clinic, 1 E. 33 st.  
 12 B. A. Yale 1872; M. D. College of Physicians and Surgeons 1875; Professor of laryngology, New York Polyclinic; Fellow American Laryngological Association; Author A social history of the eighth international congress, *Annales des maladies de l'oreille, du larynx*, Paris; *Archives internationales de laryngologie de rhinologie*, Paris, *Archivos internationales de laryngologia*, Barceylona; Associate editor, *Journal of laryngology and rhinology*, London.
- Francis Huber, M. D. Chief of Clinic, Department Diseases  
 3 of Children, 113 E. Broadway.  
 B. S. College of the City of New York 1873; M. D. College of Physicians and Surgeons 1877; House Physician and Surgeon, Colored Home and Hospital 1876-8.
- 1881 Frank Watson Jackson, M. D. Chief of Clinic, Medical  
 4 Division, and Instructor in Physical Diagnosis, 12 W. 18 st.
- 1881 George Thomas Jackson, M. D. Chief of Clinic, Depart-  
 7 ment of Dermatology, 14 E. 31 st.  
 M. D. College of Physicians and Surgeons 1878; Instructor in dermatology, New York Polyclinic 1884-7; Post-Graduate Medical School 1887-8; Professor of dermatology, Woman's Medical College of the New York Infirmary 1890-; Member American Dermatological Association; Member of Congress of American Physicians and Surgeons; Author *Diseases of the hair and scalp*, 1887, *Practical treatise on baldness*, 1889.
- 1890 Hersey Goodwin Locke, M. D. Chief of Clinic.  
 1
- 1883 Charles Henry May, M. D. Chief of Clinic, Eye Depart-  
 8 ment, Vanderbilt Clinic, 640 Madison av.  
 M. D. College of Physicians and Surgeons 1883; Author *Index of materia medica*, 1887, *Text-book on anatomy, physiology and hygiene*, 1890.
- 1888 Frederick Peterson, M. D. Chief of Clinic, Nervous Depart-  
 9 ment, 201 W. 54 st.  
 M. D. University of Buffalo 1879; Professor of pathology, University of Buffalo 1882-4; Pathologist, Buffalo General Hospital and Buffalo State Insane Asylum 1882-4; First assistant physician, Hudson River State Hospital for the Insane 1884-8; Pathologist Vassar Brothers Hospital 1884-8; Lecturer on nervous and mental diseases, New York Polyclinic 1888-; Pathologist, New York City Insane Asylums on Blackwell's and Ward's Islands 1889-; Visiting physicians, New York Hospital for Nervous Diseases; Member American Neurological Association, American Microscopical Association, American Social Science Association.



- 1888 Huntington Richards, M. D. Chief of Clinic, 19 E. 38 st.  
2 B. A. Harvard 1874; M. D. College of Physicians and Surgeons 1877; Vice-president American Otological Society.

## CLINICAL ASSISTANTS

Joseph Dyson Aspinwall, M. D.

James Arthur Booth, M. D.

- 1890 John Winters Brannan, M. D., 54 W. 11 st.

1 B. A. Harvard 1874, M. D. 1878.

Dillon Brown, M. D.

Abram Brothers, M. D.

Albert F. Brugman, M. D.

Harry H. Butts, M. D.

- 1888 John Herbert Claiborne, M. D. Clinical Assistant and  
8 Instructor in Ophthalmology, 10 E. 28 st.

M. D. University of Virginia 1883; Assistant in languages, Hanover Academy 1881-2; Clinical assistant, New York Polyclinic 1884, Instructor 1886, Lecturer on ophthalmology 1889; Clinical assistant, Manhattan Eye and Ear Hospital 1888; Attending surgeon, Northwestern Dispensary 1888; Associate editor Gaillard's medical journal; Author The theory and practice of the ophthalmoscope.

Horace Clark, M. D.

- 1890 Christopher John Colles, M. D. Throat Department.

M. D. Heidelberg 1882; House physician, German Hospital 1882-4; Attending physician, New York Dispensary 1884-5; Assistant surgeon, New York Eye and Ear Infirmary 1885-9; Assistant surgeon, DeMilt Dispensary 1889; Clinical assistant, New York Polyclinic 1889, Editor The ear and its diseases (Samuel Sexton), 1888.

Rosevell Park Collin, M. D.

William Cowen, M. D.

- 1889 Charles North Dowd, M. D. Vanderbilt Clinic, 147 W.  
4 73 st.

B. A. Williams 1879, M. A. 1884; M. D. College of Physicians and Surgeons 1886; Interne Roosevelt Hospital 1886-8.

William Cantine Gilley, M. D.

Maurice Louis Goodkind, M. D.

Robert Holmes Greene, M. D., 105 W. 71 st.

B. A. Bowdoin 1881, M. A. 1884; M. D. Harvard 1886.

- 1890 Calvin Lindsley Harrison, M. D.

Ph. B. Yale 1884; M. D. College of Physicians and Surgeons 1887; Interne, Surgical Division, Roosevelt Hospital 1887-9; Assistant surgeon, Vanderbilt Clinic, College of Physicians and Surgeons 1890-.

1877 Urban Gillespie Hitchcock, M. D.

- 14 B. A. New York Free Academy 1865; M. A. College of the City of New York 1869; M. D. College of Physicians and Surgeons 1869; House physician, Charity Hospital 1869-70; Assistant surgeon, New York Orthopedic Dispensary and Hospital 1871-3; Attending physician, New York Dispensary 1876-80; Assistant Surgeon, Throat Department, New York Eye and Ear Infirmary 1881-9, Surgeon 1889-; Instructor in laryngology, Vanderbilt Clinic 1889; Member American Laryngological Association, and Congress of American Physicians and Surgeons.

1890 Ward Andrews Holden, M. D. Vanderbilt Clinic, Eye Department, 43 E. 23 st.

- B. A. Marietta College 1884, M. A. 1887; M. D. Ohio Medical College 1887; Interne, Good Samaritan Hospital, Cincinnati 1887-8; Assistant Surgeon, New York Ophthalmic and Aural Institute.

Thomas Theodore Janeway, M. D.

Walter Buckley Johnson, M. D.

Paul Thomas Kimball, M. D.

1880 Charles Augustus Kinch, M. D., 285 W. 70 st.

- B. A. College of the City of New York 1870; M. D. College of Physicians and Surgeons 1873; Instructor in physical culture, Van Norman Institute 1890-.

1889 Samuel Waldron Lambert, M. D., 2 E. 37 st.

- B. A. Yale 1880, Ph. B. 1882; M. D. College of Physicians and Surgeons 1885.

Walter Eyre Lambert, L. R. C. P. & S. E.

1889 Robert Lewis, M. D., 449 E. 118 st.

- M. D. College of Physicians and Surgeons 1885; Member New York State Medical Association.

George Roe Lockwood, jr, M. D.

1889 Frank Ebenezer Miller, M. D. Surgeon Throat Department,  
5 Vanderbilt Clinic, 38 W. 24 st.

- B. A. Trinity 1881, M. A. 1884; M. D. College of Physicians and Surgeons 1884; Instructor of diseases of children and otology, New York Polyclinic 1886-8; Visiting Physician, St Joseph's Hospital 1887-9; Throat Surgeon, Bellevue Hospital, Outdoor Department 1886-90; Consulting Laryngoscopic Surgeon, St Joseph's Hospital 1889.

1890 Jackson Mihalovitch Mills, M. D. Vanderbilt Eye Clinic,  
107 E. 26 st.

House Surgeon, Nashville City Hospital 1884-5; Assistant Practicing Physician, K. K. Augenlinik, Innsbruck 1887; Clinical assistant, Moorfield Ophthalmic Hospital 1888, London Throat and Ear Hospital and Middlesex Eye Hospital 1888.

1889 George Rayson Newby, M. D., 353 W. 57 st.

3 M. D. College of Physicians and Surgeons 1887, Senior surgeon, Throat Department.

Alexander Barnett Pope, M. D.

1888 Charles Cook Ransom, M. A., M. D., 56 W. 49 st.

M. D. University of Buffalo 1883.

George Andrews Richards, M. D.

1889 John Ridlon, M. D. Vanderbilt Clinic., 337 W. 57 st.

B. A. University of Chicago 1875. M. A. 1878; M. D. College of Physicians and Surgeons 1878; Assistant and house physician, and assistant and house surgeon, St Luke's Hospital 1878-80, Assistant orthopedic surgeon 1888-9; Assistant surgeon New York Orthopedic Dispensary and Hospital 1881-7; Clinical assistant, instructor in orthopedic surgery and attending orthopedic surgeon in Dispensary, University Medical College 1882-7; Attending orthopedic surgeon, Out-door department, Bellevue Hospital 1887-9; Secretary American Orthopedic Association; Associate editor Medical epitome.

Frank Whitman Ring, M. D.

1890 Nathan Selleck Roberts, M. D., 151 E. 62 st.

M. D. College of Physicians and Surgeons 1867.

Charles D. Scudder, M. D.

Winslow W. Skinner, M. D.

William Kelly Simpson, M. D.

Edwin E. Swift, M. D.

William J. Swift, M. D.

1889 Henry Hawkins Tyson, jr, M. D., 47 W. 51 st.

M. D. University of the City of New York 1887; Assistant Surgeon New York Ophthalmic and Aural Institute; Member St Mark's Hospital Staff.

John Vander Poel, M. D.

1889 Hiram Nahum Vineberg, M. D. Vanderbilt Clinic, 167 E. 3 61 st.

M. D., C. M. McGill University, Montreal; Instructor in Gynecology, New York Polyclinic 1888-90; Attending physician, Mt Sinai Dispensary 1890; Member German Medical and Surgical Association 1888; Author Practical points in the diagnosis and treatment of malaria in children.

1888 Walter Joy Vought, M. D., 12 W. 10 st.

Ph. B. Yale 1882; M. D. College of Physicians and Surgeons 1885.

#### PROMOTIONS

Thomas Masters Markoe, M. D. Emeritus professor of surgery, from professor of the same.

Theodore Gaillard Thomas, M. D. Emeritus professor of obstetrics and gynecology from professor of the same.

Fessenden N. Otis, M. D. Emeritus professor of genito-urinary diseases, from professor of the same.

#### APPOINTED DURING YEAR

George Sumner Huntington, M. D. Professor of anatomy.

Charles Ernest Pellew, Demonstrator of chemistry and physics.

John B. Lynch, M. D. Second assistant in normal history.

Ervin B. Tucker, M. D. Instructor in practical obstetrics.

Ellsworth Eliot, jr. M. D. Third assistant demonstrator of anatomy.

Lucius W. Hotchkiss, M. D. Fourth assistant demonstrator of anatomy.

Robert William Taylor, M. D. Clinical lecturer on venereal diseases.

#### HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Harsen prizes for general proficiency, Austin Wilkinson Hollis	\$500
Bolling Anthony Pope,	
jr, B. S. ....	300
Charles Wilmot Towns-	
end .....	200



	Value
Harsen prizes for clinical reports, Henry Hall Forbes. . . . .	\$150
John Richard Henry Barry	75
Herman Clarence Riggs. . .	25
Alumni association prize, Eugene Hodenpyl, M. D. . . . .	500
Joseph Mather Smith prize, Eugene Hodenpyl, M. D. . . . .	100

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The teaching comprises didactic and clinical lectures and demonstrations ; practical clinical instruction given to groups of students ; and laboratory work.

### Lectures and demonstrations

#### DIDACTIC LECTURES

Didactic lectures and demonstrations, including those in which the magic lantern is used, are given by the faculty throughout the college year on the following subjects, viz.: Anatomy, physiology, physics and chemistry, materia medica, therapeutics and hygiene, obstetrics and the diseases of women, surgery, pathology and practical medicine, ophthalmology.

*Cartwright lectures of the alumni association* —According to the provisions of the Cartwright trust, there is biennially given, under the auspices of the alumni association, a course of lectures more especially addressed to graduates in medicine. This course was delivered, during the session of 1889-90, by John S. Billings, M. D., LL. D., Surgeon U. S. Army, Vital and Medical Statistics.

#### CLINICS

Eleven clinics are given each week at the Vanderbilt Clinic, as follows: Surgical, diseases of the ear, diseases of the skin, diseases of the throat, diseases of the eye, diseases of children, venereal diseases, medical, surgical, diseases of the mind and nervous system, diseases of women.

#### HOSPITAL CLINICS

Beside the college clinics, the general and special hospitals of New York afford most important fields for clinical teaching. This

college is strongly represented on the staffs of these institutions, and regular clinical instructions at hospitals is made a prominent feature of the curriculum. Admission is free to all matriculated students. At all the following hospitals instruction is given by officers of the college.

*Sloane Maternity Hospital*, corner 59 st. and 10 av.

*Roosevelt Hospital*. This has long been the seat of thorough clinical work, and has become of special importance in this respect from its position immediately opposite the new buildings of the college on 59 st. between Ninth and Tenth avenues. This hospital has just received a bequest of several hundred thousand dollars, for the erection and endowment of a new surgical operating theatre. The Roosevelt is a general hospital of 180 beds, and also possesses a flourishing out-patient department.

*New York Hospital*, 15 st. between Fifth and Sixth avs. This is a general hospital of the highest class, of 150 beds, with an out-patient department.

*Bellevue Hospital*, 26 st. and East River. The service of this hospital and of its out-patient department covers a great range of practice.

*Charity Hospital*, Blackwell's Island, East River. This hospital offers a peculiarly rich field for the study of venereal diseases, over 2,000 such cases being received yearly.

*New York Cancer Hospital*, 106 st. and Eighth av.

*New York Ophthalmic and Aurál Institute*, 46 E. 12 st. This hospital has 30 beds, and a large daily dispensary service is held for the diseases of the eye and ear.

#### DEMONSTRATIONS OF PATHOLOGICAL ANATOMY

The numerous autopsies which occur at the Roosevelt, New York, Bellevue, and Charity Hospitals, during the session, take place before the students usually at regular hours, and the hospital pathologists demonstrate and explain the lesions discovered. Whenever autopsies are to occur at these institutions, timely notice is posted on the bulletin-board of the college.

#### Practical clinical instruction

One of the greatest advantages secured to the college by the founding of the Sloane Maternity Hospital and the Vanderbilt Clinic is the possibility of organizing a system of practical clinical

teaching whereby each member of numerous small classes may be brought into direct personal contact with the cases under examination.

### Laboratory work

*Physiology* — The physiological laboratory has been fully equipped, and is designed to place within the reach of a certain number of graduates in medicine, or other advanced workers, such opportunities for original research, under the direction of the professor, as have not hitherto been attainable in New York, but are commonly sought for at European universities. The professor of physiology is not a practitioner, but devotes his entire time to physiological work at the college.

*Operative surgery upon the cadaver* — Frank Hartley, M. D., Surgeon to Bellevue and the Cancer Hospitals, and Assistant surgeon to the Roosevelt Hospital, gives special instruction in this branch in the college building from October to May. All the operations that can be practiced properly upon the cadaver are done in each course, by the members of the class.

*Anatomy* — Every student is required to dissect, and the unusual size and thorough equipment of the department of practical anatomy at the new building command special attention. The dissecting room is open all day from October to May, and the demonstrators are present during the mornings, afternoons and evenings.

A new and very valuable feature is the bone room, on the first floor of the college, contiguous to the students' reading-room. Here a large number of disarticulated skeletons are kept, and the separate bones are lent for study, as books are lent from a circulating library.

*Physiological and medical chemistry* — Practical instruction is given in the chemical laboratory, on four afternoons of each week, by the demonstrator of chemistry and physics, under the direction of the professor of chemistry.

The laboratory is newly equipped with microscopes, as well as with spectroscopes and the necessary chemical apparatus.

The regular instruction is limited to students of the first year, who are enrolled in two divisions. The second division has access to the chemical laboratory during the first half of the session, during which time the first division is occupied with normal histology.



During the second half of the session the first division attends in the chemical laboratory, and the second in that of normal histology.

The instruction includes: The preparation and study of typical animal and vegetable substances, such as the carbohydrates, the fats, the proteids, etc., and of the inorganic matters of most importance, including the commonest acids, bases and salts; distillation; fermentation; artificial digestion; the sanitary analysis of drinking water; and the properties of blood, milk, bile, etc.

The last portion of the course is devoted to the microscopical and chemical examination of urine. Quantitative methods are taught in this as far as practicable, and the students are required to examine carefully numerous samples of pathological urines collected from the various hospitals and clinics in the city.

The microscope is brought into use wherever of value in connection with chemical work.

A special optional course of some 25 lectures on medical chemistry is given by the demonstrator to each division of the class. These lectures include discussions of the composition, occurrence, preparation, properties and uses of the various substances experimented on, and also full and detailed descriptions of the different tests made in the laboratory.

*Normal histology, pathological anatomy and histology, and bacteriology*—In 1878 the alumni association of this college founded a laboratory for the use of students and practitioners of medicine, which now occupies, with its various departments, two floors of the northern part of the new college building.

Systematic practical instruction in pathological anatomy and histology and bacteriology is given to third year students, the first division of the class receiving this instruction during the first half of the session, the second division during the last half. Instruction in normal histology is arranged for first year students.

In the above courses the student is taught the methods of preparing and studying normal and diseased tissues and organs, and makes for his own future use collections of microscopical specimens, from which he prepares in the laboratory a series of outline sketches. Microscopes and reagents are furnished by the laboratory.

Abundant opportunity is afforded to practitioners of medicine and others to make special studies or original investigations in



experimental pathology, bacteriology and other themes taught in the laboratory. To the special workers the laboratory is open at all hours of the day.

### SYNOPSIS OF STUDIES

#### *First year*

Didactic lectures or demonstrations in anatomy, physiology, physics and chemistry.

Practical work in dissection, normal histology, physiological and medical chemistry.

#### *Second year*

Didactic lectures or demonstrations in anatomy, physiology, physics and chemistry, materia medica and therapeutics, including hygiene, pathology and practical medicine, including the diseases of the mind and nervous system, principles and practice of surgery, obstetrics and gynecology.

Dissection.

Clinics at the Vanderbilt clinic in general medicine, general surgery.

Practical clinical work in general medicine, general surgery.

#### *Third year*

Didactic lectures in materia medica and therapeutics, including hygiene, pathology and practical medicine, including the diseases of the mind and nervous system, principles and practice of surgery, obstetrics and gynecology, ophthalmology.

Clinics at the Vanderbilt Clinic in diseases of the mind and nervous system, gynecology, diseases of children, venereal diseases, diseases of the skin, diseases of the throat, diseases of the eye, diseases of the ear.

Practical work in pathology and pathological histology.

Practical clinical work in obstetrics.

### REQUIREMENTS FOR GRADUATION

1—Candidates who are not already graduates in medicine of recognized institutions must have pursued the regular three years' curriculum at this college; or the regular curriculum of the second and third years at this college, and such a course at some other medical school as shall have been recognized by the faculty as an equivalent for the first year's curriculum at this college.

No course at another medical school will be so recognized which shall have begun during the same calendar year as that in which the student who shall have attended it shall have entered this college.

Graduates in medicine or recognized institutions must have pursued at this college at least the regular curriculum of the third year.

2—All candidates, whether already graduates in medicine or not, must pass at this college examinations satisfactory to the faculty in anatomy, physiology, physics and chemistry, materia medica and therapeutics, including hygiene, pathology and practical medicine, including the diseases of the mind and nervous system, principles and practice of surgery, obstetrics and gynecology, clinical studies.

3—Candidates must present satisfactory evidence of good moral character and of having attained the age of 21 years.

4—Candidates must present satisfactory evidence of having complied with the requirements for admission.

5—Candidates must have studied medicine 36 months under the direction of a regular practitioner or practitioners of medicine. The three years of medical study with a preceptor includes the time spent in attendance on medical schools, and must be exclusive of any time spent as an undergraduate at a non-medical institution; but the two years' course styled "preparatory to the study of medicine," at Cornell University, the Sheffield Scientific School of Yale University, Johns Hopkins University, College of New Jersey, or University of Wisconsin, is accepted in place of six months' study with a preceptor, in the case of a student who afterward attends three sessions at this college. The phrase regular practitioner or practitioners is used in the sense commonly understood in the medical profession. Certificates of preceptorship from eclectic, homœopathic or other so-called "irregular" practitioners will not be received, even if such practitioners be graduates of regular medical schools.

## BUILDINGS

Main building, four story brick, built 1887, floor area 30,100 sq. ft. Lecture room building, three story brick, built 1887, floor area 21,120 sq. ft. Chemical and pathological laboratory, three story brick, floor area 16,512 sq. ft., two lecture rooms, 900 seats,

total value \$370,000. Sloane Maternity Hospital, three story brick, built 1887, floor area 15,000 sq. ft., value \$180,000. Vanderbilt Clinic, three story brick, built 1888, floor area 30,000 sq. ft., value \$150,000.

### ADDITIONAL INFORMATION

The Vanderbilt Clinic, the gift of the four sons of the late William H. Vanderbilt, was formally passed over to the trustees during the past year.

## UNIVERSITY OF THE CITY OF NEW YORK

### DEPARTMENT OF MEDICINE

410 E. 26 st., New York

For historic sketch and trustees see University of the City of New York, pp. 646-647.

### ADMINISTRATION

Figures in column at left give first year of service in University of the City of New York.

1881 Chancellor, Rev. John Hall, D. D., LL. D.

See also University of the City of New York, Department of Arts and Sciences.

1884 Vice-Chancellor, Rev. Henry M. MacCracken, D. D., LL. D.

See also University of the City of New York, Department of Arts and Sciences.

1871 Dean, Charles Inslee Pardee, M. A., M. D., 34 W. 38 st.

M. D. University of the City of New York 1860; Assistant surgeon 16th Regiment New York Volunteers 1862, Surgeon 1863; Attending physician Northern dispensary, New York 1866-9; Assistant surgeon, Manhattan Eye and Ear Hospital 1869, Surgeon and director 1875-; Lecturer on diseases of eye and ear, University of the city of New York 1871, Professor of otology 1874, Dean 1873-; Consulting surgeon New York City Asylum for the Insane.

Treasurer, Rudolph A. Witthaus.

Clerk, Henry C. Cooper, M. D., 410 E. 26 st.

M. D. University of the City of New York 1881.



## INSTRUCTION

Figures in column at left give first year of service in University of the City of New York and years spent in teaching.

1871 Charles Inslee Pardee, M. A., M. D. Professor of Otology.  
20 See also "Administration."

1865 Alfred Lee Loomis, M. A., M. D., LL. D. Professor of  
26 Pathology and Practice of Medicine, 19 W. 34 st.

B. A. and M. A. Union; M. D. College of Physicians and Surgeons 1853; Visiting physician, Bellevue Hospital 1860-; Charity Hospital 1860-75, Mt Sinai Hospital 1870-80; Consulting physician, Charity, Mt Sinai, Ruptured and Cripples' Hospitals, New York City Asylum for the Insane, Northern, Northwestern and Demilt Dispensaries, out-door poor department Bellevue Hospital; President Medical Society State of New York, American Climatological Society; Author Loomis on practice of medicine, Loomis on heart and lungs, Loomis on fevers, Loomis on physical diagnosis.

1867 William Hanna Thomson, M. D., LL. D. Professor of  
23 Materia Medica, Therapeutics and Diseases of the Nervous System, 7 W. 56 st.

B. A. Yale 1850, M. A. 1857; M. D. Albany Medical College 1859; Senior assistant physician, Quarantine Hospital N. Y. 1859; U. S. medical inspector 1861-5; Physician, Charity Hospital 1868-; Physician, Bellevue and Roosevelt Hospitals; Member American Association of Physicians.

1879 William Mecklenburg Polk, M. A., M. D., LL. D. Professor  
21 of Obstetrics and Diseases of Women and Children, 7 E.  
36 st.

M. D. College of Physicians and Surgeons 1869; Professor of therapeutics and clinical medicine, Bellevue Hospital Medical College 1878-; Physician, Bellevue Hospital 1874-, Emergency Lying-in Hospital; Consulting physician, St Luke's, Trinity and St Vincent's Hospitals, Hospital of Women's Medical College, Northern Dispensary; Vice-president American Gynecological Society; Member British Gynecological Society.

1882 Lewis A. Stimson, M. D. Professor of Surgery, 34 E.  
11 33 st.

B. A., M. D. Bellevue Hospital Medical College 1874; Visiting physician, New York, Bellevue and Chambers st. hospitals; Lecturer on physics, University of the City of New York 1882, Professor 1883, Professor of anatomy 1885, Professor of surgery 1888-; Member American Surgical Society; Corresponding member Surgical Society of Paris.



- 1876 Rudolph August Witthaus, M. A., M. D. Professor of  
15 Chemistry and Physics, 14 W. 23 st.

M. D. University of the City of New York 1875; Associate professor of chemistry and physiology, Medical Department University of the City of New York 1876-; Professor of chemistry and toxicology, Medical Department University of Vermont 1878; Professor of physiological chemistry, University of the City of New York 1882-6; Professor of chemistry and toxicology, University of Buffalo 1882-8; Member Chemical Society, Paris, New York State Medical Society; Author General medical chemistry, Essentials of chemistry, Student's manual of chemistry, Laboratory guide, Chemistry and toxicology.

- 1887 William Gilman Thompson, Ph. B., M. D. Professor of  
3 Physiology, 49 E. 30 st.

Ph. B. Yale; M. D. College of Physicians and Surgeons 1881; Visiting physician, New York Hospital and Bellevue Hospital; Assistant visiting physician, New York Cancer Hospital; Member Association of American Physicians.

- 1889 George Woolsey, M. D. Professor of Anatomy, 49 E.  
2 30 st.

B. A. Yale; M. D. College of Physicians and Surgeons 1885; Attending surgeon, Bellevue Hospital.

- 1873 Stephen Smith, M. D. Professor of Clinical Surgery, 574  
17 Madison av.

M. D. College of Physicians and Surgeons 1850; Resident physician, Bellevue Hospital; Professor of Surgery 1861-5; Professor of anatomy, Bellevue Hospital Medical College 1865; Professor of orthopedic surgery, Medical Department University of the City of New York; Visiting surgeon, Bellevue Hospital 1854-.

Alexander E. MacDonald, LL. B., M. D. Professor of Medical Jurisprudence and Psychological Medicine.

General superintendent of the New York City asylums for the insane.

- 1888 Charles Stedman Bull, M. A., M. D. Professor of Ophthalmology, 51 W. 36 st.  
2

B. A. and M. A. Columbia; M. D. College of Physicians and Surgeons 1868; House physician, Bellevue Hospital 1867-8; Visiting surgeon, Charity Hospital 1875-80; Assistant surgeon, Manhattan Eye and Ear Hospital 1871-3; Assistant surgeon, New York Eye and Ear Infirmary 1871-6, Surgeon, 1876-; Consulting ophthalmic surgeon, St Luke's Hospital, St Mary's Hospital for Children, Nursery and Child's Hospital; Lecturer on Ophthalmology Bellevue Hospital Medical College; Member New York State Medical Association, American Ophthalmic Society.

- 1873 Henry G. Piffard, M. D. Clinical Professor of Dermatology,  
16 10 W. 35 st.

M. D. College of Physicians and Surgeons 1864; House surgeon, Bellevue and Charity Hospitals 1864-5; Lecturer on urinary analysis Medical Department University of the City of New York 1873; Surgeon, 71st regiment National Guard 1867-8; Surgeon, Charity Hospital 1871-; Consulting surgeon, St Elizabeth's Hospital 1877-;

- 1873 Joseph Eil Winters, M. D. Clinical Professor of Diseases of  
16 Children, 36 W. 32 st.

M. D. University of the City of New York 1872; Tutor of anatomy, Medical Department University of the City of New York 1873-; House physician, Bellevue Hospital 1873-5; Demonstrator of anatomy, Medical Department University of the City of New York 1874-; Assistant curator and pathologist, Bellevue Hospital 1876-.

- 1882 Prince Albert Morrow, M. A., M. D. Clinical Professor of  
8 Genito-Urinary Diseases, 66 W. 40 st.

M. D. University of the City of New York 1874; Fellow Physicians Mutual Aid Association; Surgeon, Charity Hospital, Bellevue Hospital out-door poor; Physician, St Barnabas Hospital and Dispensary; Member American Academy Medicine, Public Health Association, American Association Genito-Urinary Surgeons, New York Dermatological Society, President American Dermatological Association; Honorary member Academy of Medicine of Mexico; Clinical professor Ven. Dispensary and formerly Lecturer on Dermatology, Medical Department University of the City of New York.

- 1885 William Chapman Jarvis, M. D. Clinical Professor of  
6 Laryngology, 142 Madison av.

M. D. University of Med. 1876; Visiting physician, Charity Hospital; Consulting physician, out-door poor department Bellevue Hospital; Member American Laryngology Society; Honorary member New York Academy of Anthropology.

- 1881 Laurence Johnson, M. D. Clinical Professor of Medicine,  
9 363 W. 28 st.

M. D. Bellevue Hospital Medical College 1868; Lecturer on medical botany, University of the City of New York 1881, Professor 1885; Medical manager and physician of Mutual Aid Association.

- 1887 Abel Mix Phelps, M. D. Clinical Professor of Orthopedic  
3 Surgery, 40 W. 34 st.

M. D. University of Michigan 1873; Professor of surgery, New York Post Graduate School, University of Vermont; Visiting surgeon, Charity Hospital; Consulting surgeon, Mary Fletcher Hospital, Burlington, Vt.; Member New York State Medical Society.

- 1886 Henry Patterson Loomis, M. D. Adjunct Professor of  
6 Pathology and Director of the Pathological Laboratory,  
58 E. 34 st.

M. D. University of the City of New York 1883; Visiting physician and curator, Bellevue Hospital 1883-5; Pathologist, New York Board of Health.

- 1885 Edward Dix Fisher, M. D. Adjunct Professor of Nervous  
6 Diseases and Psychological Medicine, 6 W. 39 st.

M. D. University of the City of New York 1878; Physician, Hospital for Incurables, Blackwell's Island; Pathologist, New York City Insane Asylum; Professor of Nervous and mental diseases, University of Vermont.

- 1886 Charles Elihu Quimby, M. A., M. D. Assistant Professor  
5 of Practice of Medicine, 44 W. 36 st.

M. D. University of the City of New York 1878; Bellevue Hospital 1878-9; Assistant visiting physician, Bellevue Hospital; Consulting physician, hospital on North Brothers' Island for contagious diseases.

- 1885 James Clifton Edgar, Ph. B., M. A., M. D. Adjunct Pro-  
4 fessor of Obstetrics, 115 E. 35 st.

M. D. University of the City of New York 1885; Interne, Bellevue Hospital 1885-87, Assistant curator 1887; Attending physician, diseases of Women out-door poor department, Bellevue Hospital; Interne, Waaren Klinik of Munich, Bavaria 1888.

- 1883 Egbert Le Fevre, B. A., M. D. Clinical Professor of Medi-  
2 cine, 161 W. 23 st.

M. D. University of the City of New York; Lecturer, New York Polyclinic.

- 1887 Fred Walker Gwyer, M. D. Clinical Professor of Operative  
4 and Clinical Surgery, 207 E. 14 st.

M. D. University of the City of New York, 1883; Interne, Bellevue Hospital 1883-4.

- 1889 Irving Samuel Haynes, M. D. Demonstrator of Anatomy,  
2 314 E. 86 st.

M. D. University of the City of New York 1887.



- 1885 John B. Knapp, M. D. Lecturer in Department of Materia  
7 Medica, 62 W. 51 st.

M. D. College of Physicians and Surgeons 1875.

- 1883 Ivin Sickels, M. D. Lecturer in Chemistry and Physics.  
16 See also College of the City of New York.

- 1888 Robert M. Fuller, M. D. Lecturer on Dermatology, 136  
12 W. 42 st.

M. D. Albany Medical College 1865; Visiting physician, Charity Hospital.

- 1883 William Haley Michael McEnroe, M. D. Lecturer on  
6 Nervous Diseases, 55 E. 11 st.

M. D. University of the City of New York 1883; Assistant Chair of Materia Medica, Medical department University of the City of New York 1883-8; Attending physician, Dispensary.

- 1890 Willis E. Ford, M. D. Lecturer on Electro-Therapeutics,  
1 Utica.

M. A. Colgate 1884; M. D. University of the City of New York 1872; House staff of Charity Hospital 1872; Assistant physician, New York State Insane Asylum; Utica; Medical director St Luke's Hospital, Utica; Professor of Electro-therapeutics University of Buffalo 1888-; Member American Gynecological Society, American Clinatological Society, State Medical Society.

- 1889 Henry S. Stearns, M. D. Assistant instructor in Pathologi-  
2 cal Laboratory, 21 E. 44 st.

M. D. University of the City of New York 1884.

- Trumbull W. Cleveland, M. D. Instructor in Gynecology,  
4 242 W. 43 st.

M. D. University of the City of New York 1884.

- 1886 William Travis Gibb, M. D. Instructor in Gynecology, 161  
4 E. 34 st.

M. D. University of the City of New York 1886; Instructor in chemistry, University of the City of New York, Medical department 1882-6; Interne, Bellevue Hospital 1886-7; House surgeon, Hospital for Crippled and Ruptured 1887-8.

- 1887 Horace C. Vandenberg, M. D. Instructor in Chemical  
4 Laboratory, 356 Lexington av.

M. D. Bellevue Hospital Medical College 1886.

- 1889 Marcus E. Tully, M. D. Instructor in Ophthalmology.

M. D. Bellevue Hospital Medical College.



- 1890 Henry H. Seabrook, M. D. Instructor in Ophthalmology,  
1 1032 Lexington av.

M. D. College of Physicians and Surgeons 1881.

- 1889 Thomas D. Coleman, B. A., M. D. Assistant in Physio-  
1 logical Laboratory, Augustus, Ga.

M. D. University of the City of New York 1890.

- 1890 Warren Coleman, B. A. Assistant in Physiological Labora-  
tory, 410 E. 26 st.

- 1884 William Leland Stowell, M. D. Instructor in Diseases of  
7 Children, 136 E. 18 st.

M. D. University of the City of New York 1881; Physician and surgeon, Charity and Maternity Hospitals 1883; Pathologist, Demilt Dispensary 1885-8.

- 1883 Wickes Washburn, M. D. Instructor in Psychological  
8 Medicine and Medical Jurisprudence, 42 Irving pl.

M. D. University of the City of New York 1877; Assistant superintendent, City Insane Asylum 1880; Visiting physician, St Luke's Home 1880-; Physician, New York Lying-in Asylum 1882-, Eastern Dispensary 1880-3.

- 1887 Charles Slover Allen, M. D. Instructor in Laryngology, 21  
4 E. 28 st.

M. D. Bellevue Hospital Medical College 1881.

- 1889 Frederick Thomas Reyling, M. D. Instructor in His-  
2 tological Laboratory, 355 W. 32 st.

M. D. University of the City of New York 1884; Pathologist, Demilt Dispensary; Professor of materia medica and therapeutics, New York College Comparative Histology and Veterinary Surgery.

- 1888 Lewis Augustus Coffin, M. D. Instructor in Physiology, 27  
3 W. 11 st.

M. D. University of the City of New York 1886.

- 1889 John M. Byron, M. D. Instructor in Bacteriology, 215 Sec-  
2 ond av.

M. D. Naples (Italy) 1887.

- 1886 David Dunlop Jennings, M. D. Instructor in Surgery and  
5 Assistant to Department of Surgery, 352 Second av.

M. D. University of the City of New York 1886; House staff, Bellevue Hospital 1886-7; Attending surgeon and diseases of children, Bellevue Hospital out door poor department.

- 1889 Justin L. Barnes, M. D. Instructor in Otology, 45 E. 41 st.  
2 M. D. University of the City of New York 1885.
- 1890 Charles M. Ford. First Assistant Demonstrator of Anatomy  
1 and Assistant to Department of Surgery, 119 E. 10 st.  
M. D. University of the City of New York 1888.
- 1887 Cornelius Godfrey Coakley, B. A., M. D. Lecturer on  
5 Anatomy, 40 E. 35 st.  
M. D. University of the City of New York 1887; Hospital staff,  
Bellevue Hospital 1887-8; Director histological department  
Loomis Laboratory.
- Alexander McL. Jeffrey, M. D. Assistant to Department of  
Practice of Medicine.  
M. D. University of the City of New York 1887.
- Archibald E. Isaacs, M. D. Assistant to Department of  
Surgery, 107 Henry st.  
M. D. University of the City of New York 1886.
- Charles P. R. Shoenemann, M. D. Assistant to Department  
of Clinical Surgery, 340 Lexington av.  
M. D. University of the City of New York 1875.
- Marcus K. Goldsmith, M. D. Assistant to Department of  
Diseases of Children.  
M. D. University of the City of New York 1886.
- Walter L. Carr, M. D. Assistant to Department of Diseases  
of Children, 8 E. 58 st.  
M. D. University of the City of New York 1882.
- Stuart Douglas, M. D. Assistant to Department of Diseases  
of Mind, 35 W. 36 st  
M. D. University of Virginia 1881.
- Francis A. Scratchley, M. D. Assistant to Department of  
Diseases of Mind.  
M. D. University of the City of New York.
- 1888 Etienne C. Vidal, M. D. Assistant to Department of Derma-  
3 tology, 241 E. 52 st.  
M. D. University of Pennsylvania 1879.

Charles W. Allen, M. D. Assistant to Department of Genito-urinary Diseases, 696 Madison av.

M. D. College of Physicians and Surgeons 1878.

John A. Fordyce, M. D. Assistant to Department of Genito-urinary Diseases, 66 Park av.

M. D. Chicago Medical College 1881, Berlin 1888.

Charles E. Clark, M. D. Assistant to Department of Laryngology, 472 Greene av., Brooklyn.

M. D. University of the City of New York 1884.

Simon J. O'Neil, M. D. Assistant to Department of Obstetrics, 421 E. 86 st.

M. D. University of the City of New York 1887.

1890 Warren O. Plimpton, M. D. Assistant to Department of  
1 Orthopedic Surgery, 40 W. 34 st.

M. D. College of Physicians and Surgeons 1888.

## HONORARY DEGREES

.(None)

## COLLEGE APPOINTMENTS

Valedictory, George Macdonald Major..... New York  
Hospital appointments

- 1 C. A. Knight
- 2 G. D. Hamlen
- 3 H. C. Elsing
- 4 C. R. Chapman
- 5 W. F. Stone
- 6 J. L. Whitcomb

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Proficiency in examinations, H. C. Elsing.....	\$200 00
C. A. Knight .....	100 00
D. L. Shea .....	50 00
Mott prize medals, gold, Edward P. Clark .....	20 00
silver, Melville Demarest.....	3 50
bronze, George Estey Doty.....	2 00
Fellowships to encourage original research in laboratory work, Warren Coleman, B. A.....	300 00

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The instruction during the winter session consists of scholastic and clinical lectures, recitations, practical demonstration of subjects involving manipulation, and practice at the bedside and in the laboratories.

## SCHOLASTIC LECTURES

Four or five scholastic lectures are given in the lecture room or amphitheatre daily during the term, until the beginning of the final examinations in March.

*Chemistry and physics* — Professor Witthaus gives two lectures on chemistry and lecture on physics each week.

In these subjects attention is given mainly to the fundamental principles and to "medical" chemistry and physics. The lectures are fully illustrated by experiments.

*Practice of medicine and pathology* — Professor Loomis gives three lectures each week on pathology and practice of medicine. These lectures are illustrated by fresh pathological specimens, by charts, plates and micro-photographs.

*Anatomy* — The professor of anatomy gives three lectures each week. These lectures are illustrated by recent dissections, wet and dry preparations, models, charts and drawings, and include general, special, topographical and surgical anatomy.

*Materia medica and therapeutics* — Professor Thompson gives three lectures each week on materia medica and therapeutics.

In these lectures special attention is directed to the disinfectants, to general hygiene, and to those remedial agents which are not medicines, and to the actions of medicines proper with particular reference to their practical application.

*Surgery* — Professor Stimson gives three lectures a week on the principles and practice of surgery.

*Obstetrics and gynecology* — Professor Polk and Professor Edgar give three lectures a week on obstetrics and gynecology. These are illustrated by charts, diagrams, specimens and by demonstrations on the cadaver and manikin. All of the principal obstetric operations are performed on the cadaver and manikin before the class.



*Physiology*—Professor Thompson gives three lectures a week on physiology. These lectures are fully illustrated by such experiments on living animals as can be used to advantage in the lecture room, as well as by diagrams, automatic and other models, apparatus and experimental demonstrations. The bearings of physiological science on the practice of medicine and surgery are particularly emphasized.

*Pathology*—Professor H. P. Loomis gives one lecture a week on general pathology, illustrated by fresh gross pathological specimens, diagrams and projections on the screen of photo-micrographs.

Autopsies are performed before the class to illustrate the method of making post-mortem examinations.

#### CLINICAL LECTURES

Clinical lectures are given every day at the college or in the amphitheatre of Bellevue Hospital.

*Medicine*—Professor Loomis gives one clinical lecture in Bellevue Hospital each week throughout the collegiate year, and one in the college building until January. In connection with these lectures he organizes a diagnosis class, held in the amphitheatre of Bellevue Hospital every Tuesday, when students examine patients and make diagnoses before the class.

Professor Thomson gives one clinical lecture at the college each week, and one clinic each week till December in Bellevue Hospital.

Professor Laurence Johnson gives one clinical lecture each week, except during December.

Professor Le Fevre gives one clinical lecture each week after January first.

*Diseases of children*—Professor Winters gives one clinical lecture each week at the college on diseases of children, and special instruction on diseases of children to graduates in medicine on Tuesdays and Saturdays at one o'clock. This course is free to all matriculants of the university.

*Gynecology*—This clinic is given by Professor Polk in the amphitheatre of Bellevue Hospital every week, and embraces all the operations of consequence relating to the disorders of women. The success which has been reached in this hospital in abdominal surgery enables the professor of gynecology to fully illustrate this important department of the course.

In addition to this clinic Professor Polk supervises the clinical demonstrations in obstetrics and gynecology, which are carried on at the college.

*Surgery*—Professor Stimson gives one clinical lecture in Bellevue Hospital each week till January, and one at the college each week during the session; and also occasional clinics at the New York Hospital for members of the graduating class and physicians only.

Professor Woolsey gives one clinical lecture each week during January and February in Bellevue Hospital.

Professor Gwyer gives one clinical lecture each week during March and April in Bellevue Hospital and one each week at the college on genito-urinary surgery.

Professor Smith gives one clinical lecture in the amphitheatre of Bellevue Hospital, each week during winter session, after December first.

*Genito-urinary diseases*—Professor Morrow gives a clinical lecture in Charity Hospital each week in September, October and November.

*Otology*—Professor Pardee lectures during December.

*Dermatology*—Professor Piffard gives one clinical lecture each week after December first.

*Psychological medicine and medical jurisprudence*—Professor Macdonald or Professor Fisher lecture once a week, until January first, and the course is abundantly illustrated by cases from the asylum on Ward's Island.

*Orthopedic Surgery*—Professor Phelps gives one clinical lecture each week.

*Ophthalmology*—Professor Bull lectures once a week, illustrates the lectures by cases and performs operations in the presence of the class.

*Laryngology*—Professor Jarvis gives one clinical lecture each week.

*Electro-therapeutics*—Dr Ford gives a course of six lectures during the session.

The material for these clinical lectures is drawn from the university division of Bellevue Hospital, out-door department of Bellevue Hospital, college dispensary and special dispensaries and hospitals with which the different lecturers are connected. The supply is so abundant, so far in excess of the ability to utilize

it all in the lecture room, that the faculty determined in 1883 to use the surplus to provide additional facilities for advanced students and graduates personally to examine cases of disease and to receive practical instruction in diagnosis and treatment. These facilities are believed to be now greater than those offered by any other medical school in the country.

#### BEDSIDE AND DISPENSARY INSTRUCTION

The graduating class is divided into sections of about 25 each, which receive separate instruction for one or two hours daily throughout the term. This instruction is carried on partly in the wards of Bellevue Hospital and partly at the college. The students receive practical instruction in operative surgery on the cadaver, in the examination of medical and surgical cases for diagnosis, in the application of dressings and apparatus, and in using the laryngoscope and ophthalmoscope.

In the hospital students are taken to the bedside of the patient and are exercised in making diagnosis under the direction of the instructor, and in dressing wounds, and are enabled to watch the progress of cases. In the dispensary they have similar opportunities to become familiar with the methods of diagnosis, the treatment and the course of those diseases which do not require confinement in bed.

Professor Fisher and Dr McEnroe afford ample opportunities for observing the applications of electricity in the treatment of disease in the department for nervous diseases in the dispensary.

The success of this system of instruction has been very marked in the past, and it has given much satisfaction to both students and teachers; it enables the students to become practically familiar with many things which they have learned from textbooks or in the lecture room, to cultivate powers of observation and to aid memory. The importance which the faculty attach to it is shown in the fact that it involves an increase in the time given to instruction of more than 20 hours a week.

#### PRACTICAL SURGERY ROOM

A course in operative surgery is given to the graduating class by Professor Gwyer, under the direction of the professor of surgery.



Operative surgery is taught by demonstrations on the cadaver and by enabling each member to personally perform the principal surgical operations on the cadaver.

During the last winter session the members of each class in operative surgery performed 80 operations, each member of the class personally performing or assisting in 40 operations.

These operations are performed under the close supervision and individual instruction of Professor Gwyer and two trained assistants.

#### COURSE IN OPERATIVE OBSTETRICS AND GYNECOLOGY

The sections receive instruction in the diagnosis of the various presentations and positions; this to be followed by a course on obstetric operations. In this course improved manikins and the cadaver will be also employed. When possible, advanced students are given cases of labor which they attend under the direction of Adjunct-Professor Edgar.

In the department of gynecology the instruction embraces the methods of examination, use of instruments and introduction of pessaries, the clinical material found in the dispensary being ample for all.

#### PRIVATE INSTRUCTION

In addition to the sectional teaching which is a part of the regular course, several private courses in special branches are given by members of the faculty to advanced students and graduates. These courses are entirely optional with the student and do not affect his standing in the class.

#### PRACTICAL ANATOMY

The study of practical anatomy is required of each student. Work in the dissecting room is prosecuted from the beginning of the regular term till the middle of May, and is under the personal supervision of the professor and the demonstrators of anatomy. Each student is examined on his work in the dissecting room, and the mark obtained is added to his final examination in anatomy. Every facility and encouragement is given by the professor of anatomy for the pursuit of practical work in the dissecting room beyond the requirements of the prescribed course.

#### POST-MORTEM EXAMINATIONS

In addition to the scholastic instruction which is given in pathology, the students are taken by the curator to the post-



mortem room of Bellevue Hospital, where examinations are made in their presence, and opportunities given to personally study diseased tissues and organs, *in situ*.

#### FACULTY RECITATIONS

Regular recitations are held every week on subjects lectured on during the preceding week.

The recitations serve to explain difficult or obscure points not appreciated by the students, and to give their studies a practical direction. They serve also as an indication of the fidelity with which students are prosecuting their work. During the spring term the recitations follow assigned readings, and the students are encouraged to ask questions regarding any topics which they do not clearly understand.

Those desiring to avail themselves of these recitations will be furnished tickets by the dean at the time of their matriculation. Only those having such tickets will be admitted to the room.

#### LABORATORY INSTRUCTION

##### LABORATORY OF MATERIA MEDICA AND EXPERIMENTAL MEDICINE

This laboratory is provided with a full assortment of the various articles of the materia medica to be used in giving the students a practical acquaintance with each drug and its preparation.

Classes are formed to work in the laboratory, under the supervision of Dr J. B. Knapp, for the purpose of insuring familiarity with the compounding and administration of medicines.

In addition to this, practical instruction is given in the use of remedies which are not medicines. This includes a special course in electrical therapeutics, for which purpose the laboratory has been fully equipped.

##### LABORATORIES OF CHEMISTRY AND PHYSICS

The second floor is devoted to the laboratory of chemistry, and is divided into a general laboratory, a laboratory of special research, balance room, furnace room and laboratory of toxicology.

This laboratory is open during the preliminary, winter and spring terms, and to special students throughout the year.

The courses are preliminary, advanced and special.

Each student is fully supplied with all apparatus and chemicals required, except urinometers, which are carefully corrected for the student that they may serve for future use.

The preliminary course includes the examination of normal and morbid urine. It deals with the determination of the physical characters of the urine; the detection of abnormal ingredients, as albumen, blood, bile, etc., and the determination of the quantity of both normal and abnormal constituents. The importance of that practical acquaintance with the manipulations of analysis of urine, which is only obtainable in the laboratory, has long been recognized by students of the university, very few of whom graduate without taking this course, although it is optional.

The advanced course is open to all students who have taken the preliminary course and have passed a satisfactory examination therein.

It consists of practice in the tests for the mineral poisons and for those organic poisons which are of clinical interest.

Spectroscopic and microscopic examinations of blood, etc., as required in medico-legal practice.

Polariscopic determinations of sugar and albumen.

These courses will be personally conducted by the professor of chemistry and physics, assisted by instructors.

The laboratories of chemistry and physics being supplied with all apparatus and facilities required for advanced work in those departments, and the professor being in daily attendance, opportunity is offered to physicians or students desirous of following special lines of study or investigation.

The laboratory of physics contains the cabinet of physical apparatus accumulated by the medical department during the past 10 years. In this cabinet are contained an induction coil by Ritchie, capable of giving an 18 inch spark, a large diamagnetic machine, a 10 foot direct vision spectroscope, made under the direction of the astronomer royal, Saccharimeters of Laurent, Scheibler and Mitscherlich, a complete set of apparatus for electrical measurements, complete apparatus for the study of polarized light, etc.

#### LABORATORY OF PHYSIOLOGY

The physiological laboratory is provided with entirely new apparatus and facilities for experimental research.

During the past year the alumni of the college have raised a fund to procure some of the elaborate recording instruments now used by physiologists. This collection has been manufactured for

the laboratory, and imported from Europe, and the laboratory is now well supplied with kymographs, myographs (including a pendulum myograph), manometers, etc.

The laboratory also contains a large tank for administering to animals air or oxygen, compressed under many atmospheres of pressure; an air pump for experiments on animals with rarefied air; hot air chambers for the study of the effects of external heat on body temperature; large automatic models of the heart and spinal cord, and of the mechanism of gland secretion, urine secretion and micturition, etc.

There is also a museum of comparative physiology, including a valuable series of casts illustrating the comparative anatomy of the brain. The laboratory is furnished with special vivisection tables, work benches, abundant gas and water supply, artificial respiration apparatus, etc.

Opportunity is afforded graduates and advanced students to undertake original investigation in normal and pathological physiology.

Classes in operative and experimental physiology are held by Professor Thompson. Each class is limited in number, and is intended for those second or third year students who desire some practical knowledge of experimental methods. Each student is enabled to perform himself some of the principal physiological operations on animals.

#### LABORATORIES OF HISTOLOGY AND PATHOLOGY

The two general class rooms are each provided with suitable tables, furnished with 40 microscope stands and Hartnack and Zeiss objectives, together with all necessary reagents and accessories for class courses. The regular laboratory course usually taken by students during the last year of their college work, embraces the following studies:

- 1 Theory of the microscope and its accessories:
- 2 Classification of the tissues of the body:
- 3 Methods of hardening, cutting, staining and mounting the different tissues:
- 4 Embryological development of the various tissues:
- 5 Preparation and study of sections of the principal tissues and organs of the body:
- 6 Study of sections illustrating the common lesions of the principal organs:
- 7 Demonstration of gross pathological specimens:
- 8 Micro-organisms and



the method of staining the tubercle bacilli : 9 Tumors and pathological fluids : 10 Casts and urinary deposits.

An examination is held at the close of each course, as part of the final examinations in pathology and theory and practice of medicine.

The pathological laboratory is furnished with every convenience for private investigation, and more extended and exhaustive instruction than may be afforded in the regular courses.

Microtomes, a glass-blowing apparatus and all the necessary chemicals and reagents are at the disposal of those working in the laboratory.

The photographic department under the charge of Dr H. S. Stearns, is provided with a complete equipment for photographing gross specimens, and especially for photo-micrography.

The bacteriological department is provided with a complete equipment for microbic investigation. The collection of cultures includes all known varieties, and scientific investigators will be provided with conveniences for the study of bacteriology, such as may meet every possible requirement.

Attenuated rabic virus received from Pasteur of Paris, is kept constantly prepared ready to inoculate any cases of hydrophobia which may be brought to the laboratory.

## REQUIREMENTS FOR GRADUATION

The candidate for the degree of M. D. must be of good moral character and 21 years of age. He must have attended two full winter sessions of lectures, the last of which must have been in this college.

He must have studied medicine for not less than three years, and have attended at least one course of practical anatomy. He must present to the dean full certificates of the time of study, of age and of moral character.

He must pass satisfactory written examinations before the professors of surgery, chemistry, practice of medicine, materia medica, anatomy, physiology and obstetrics.

The examination in chemistry will be partly written and partly a practical examination in the laboratory in urinalysis.

Students who are ready for final examination in anatomy will be required to pass a practical examination on the cadaver and the



marks thus received will be added to those of the written examination.

Rejected candidates will not be admitted to a re-examination until after the lapse of one year.

The above requirements hold good for all students who began the study of medicine prior to June 13, 1889.

Laws passed by the legislature of the state of New York in 1889 and 1890, established the following requirements for all others.

All who seek to matriculate at this college *for the first time* with a view to become candidates for the degree of doctor of medicine are required to pass an examination on preliminary studies as specified below, with the following exceptions :

1 Applicants who present diplomas or certificates of graduation in arts, philosophy or science from recognized colleges or schools of science.

2 Applicants who present "certificates of having successfully completed a full year's course of study in any college or university under the supervision of or registered by the regents, as maintaining a satisfactory collegiate standard ; certificates of having satisfactorily completed a three years' course in any institution under the visitation of or registered by the regents as maintaining a satisfactory academic standing ; regents' diplomas, pass cards issued in the regents' examinations for eight studies or regents' certificates for any 10 studies."

The examinations on the preliminary studies will be conducted either by the regents or by an examining board from the academic department appointed by the council of the university, and will be held in the college building. A second examination will subsequently be held, probably in the spring. Students may elect at which one of these dates they will present themselves for examination, but if they elect the second, and should fail to pass satisfactorily, their college fees for the year will not be returned.

The subjects of examination are arithmetic, grammar, geography, orthography, American history, English composition and the elements of natural philosophy or physics.

Beginning with the session of 1891-92, candidates for graduation except such as have previously matriculated in this college, will be required to have attended three full winter courses of lectures.

Honorary degrees are not granted.

The degree will not be conferred on any candidate who absents himself from the public commencement without the special permission of the faculty.

Two commencements take place annually in the university, at either of which the candidates who have complied with the above requirements may graduate. The first is at the close of the winter, the second at the close of the spring session.

With a view to the ultimate establishment of a systematic, graduated scheme of tuition, students who have attended two full courses of lectures, and who have completed two years of study, may be admitted to the examinations in chemistry, anatomy and physiology, and, if successful, will be examined, at the end of the next winter session, only on practice, materia medica and therapeutics, surgery and obstetrics.

Students who propose to pass their final examinations at the close of the spring session may be examined on anatomy, physiology and chemistry at the examinations above named, but in the case of failure will not be admitted to another examination on these subjects at the end of the term.

### BUILDINGS

Main building, four story brick and stone, built 1876-82, floor area 29,280 sq. ft. Two lecture rooms, 1,000 seats, value \$226,074. Loomis Laboratory, five story brick and stone, built 1887, floor area 14,600 sq. ft., value \$100,000.

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## UNION UNIVERSITY ALBANY MEDICAL COLLEGE

*Eagle st., Albany*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1821	Private school of medicine begun by Dr Alden March.
	1833	Application made to legislature for incorporation of medical college in Albany referred to regents and adversely reported on ground that two existing medical colleges in state were sufficient.

Month Year

- 1835 Dr James H. Armsby associated with Dr March in private school.
- 16 F 1839 Legislature incorporated Albany Medical College. The anatomical collections of Drs March and Armsby were placed in the college.
- 1 N 1857 The opening of Albany hospital affording opportunities for clinical instruction.
- 1871 An effort made to establish rival medical college which was never organized.
- 10 Ap 1873 Albany medical college associated in Union University.
- 6 F 1874 Association of Alumni of Albany Medical College incorporated.

## TRUSTEES

President, Joseph W. Russell .....	Albany
Vice-President, William L. Learned .....	"
Secretary, Charles L. Pruyn .....	"
Mayor of Albany, ex-officio .....	"
Recorder of Albany, ex-officio .....	"
John M. Crapo .....	"
Matthew Hale .....	"
Abraham Lansing .....	"
Charles B. Lansing .....	"
James McNaughton .....	"
Henry T. Martin .....	"
Erastus D. Palmer .....	"
Amasa J. Parker, jr .....	"
Joseph H. Ramsey .....	"
Albion Ransom .....	"
Clarence Rathbone .....	"
John F. Rathbone .....	"
Osgood H. Shepherd .....	"
James M. Warner .....	"
James D. Wasson .....	"

## APPOINTED DURING YEAR

Harrison E. Webster .....	Schenectady
Richard V. De Witt .....	Albany
Charles H. Van Benthuyssen .....	"

## VACANCIES

Bradford R. Wood, Albany, died S 1889  
 George B. Steele, Albany, died Mr 1890  
 Eliphalet N. Potter, Geneva, resigned Mr 1890  
 David Murray, Albany, resigned Mr 1890

## ADMINISTRATION

Figures in column at left give first year of service in Albany Medical College.

1888 President of the University, Harrison E. Webster, LL. D.  
 See also Union College.  
 1839 Dean, Thomas Hun, M. D., LL. D.

B. A. Union 1826, M. A. 1829, LL. D. 1877; M. D. University of Pennsylvania 1830; Professor of Institutes of Medicine, Albany Medical College 1839-53, Institutes of medicine and materia medica 1853-5, Institutes of medicine 1855-9, Emeritus professor 1876; Consulting Physician, St Peter's and Child's hospitals; Member New York State Medical Society, Secretary 1850-83; President American Medical Association 1862.

1871 Registrar, Willis G. Tucker, M. D., Ph. D., 4 Lancaster st.

M. D. Albany Medical College 1870; Ph. G. Albany College of Pharmacy 1882; Ph. D. Union 1882; Assistant Professor of chemistry 1871-4, Lecturer on materia medica and assistant professor of chemistry 1874-5, Adjunct professor of materia medica and chemistry 1875-6, Professor of inorganic and analytical chemistry and medical jurisprudence 1882-7, Professor of inorganic and analytical chemistry and toxicology 1887-; Professor of chemistry, Albany Academy 1873-4, St Agnes' School 1873-, Albany Female Academy 1875-80, Albany High School 1876-87; Fellow Chemists, Society of London, American Association for the Advancement of Science; Member American Chemists' Society, New York State Medical Society.

## INSTRUCTION

Figures in column at left give first year of service in Albany Medical College and years spent in teaching.

1839 Thomas Hun, M. D., LL. D. Dean and Emeritus Professor  
 20 of the Institutes of Medicine.  
 See also "Administration."



- 1869 Albert Vander Veer, M. D. Professor of Didactic, Abdomi-  
21 nal and Clinical Surgery.

M. A. Williams 1882; Ph. D. Hamilton and Union 1883; M. D. Albany Medical College; Professor of general and special anatomy 1869-73, Principles and practice of surgery 1876-80, Principles and practice of surgery and clinical surgery 1880-3, Surgery and clinical surgery 1883-9; Fellow American Surgical Association and British Gynecological Society; Member American Association of Obstetricians and Gynecologists, British Medical Association.

- 1870 Maurice Perkins, M. D. Professor of Chemical Philosophy  
25 and Organic Chemistry.

Educated at Harvard; Professor of chemistry and toxicology 1870-6, Chemical philosophy and organic chemistry 1876-.

- 1870 John M. Bigelow, M. D. Professor of Materia Medica.  
21 Therapeutics and Diseases of Throat and Nose, 54  
Eagle st.

B. A. Williams 1866, M. A. 1869; M. D. College of Physicians and Surgeons 1870, Albany Medical College 1870; Professor of materia medica, Albany Medical College 1870-3, Materia medica and therapeutics 1873-88, Materia medica, therapeutics and diseases of throat and nose 1888; Member New York State Medical Society.

- 1876 Lewis Balch, M. D., Ph. D. Professor of Medical Juris-  
14 prudence.

M. D. College of Physicians and Surgeons; Professor of anatomy, Albany Medical College 1876-87, Anatomy and Medical Jurisprudence 1887-.

- 1876 Samuel B. Ward, M. D., Ph. D. Professor of Theory and  
22 Practice of Medicine.

B. A. Columbia 1861, M. A. 1864; M. D. Georgetown College Medical Department 1864; Ph. D. Union 1882; Professor of anatomy, Woman's Medical College 1869-73, Professor of surgery 1873-6; Professor of surgical pathology and operative surgery, Albany Medical College 1876-84, Professor of theory and practice of medicine 1884-; Visiting surgeon, Presbyterian Hospital, New York 1873-5, Albany and St Peter's Hospitals 1876-84; Visiting physician, Albany Hospital 1884-; Consulting physician, St Peter's Hospital 1884-; Member Medical Society State of New York.

- 1876 James Peter Boyd, M. D. Professor of Obstetrics, Gyne-  
14 cology and Diseases of Children.

M. D. College of Physicians and Surgeons; Professor of diseases of women and children, Albany Medical College, Obstetrics 1876-86, Obstetrics, gynecology and diseases of children 1886-.

- 1870 Willis G. Tucker, M. D., Ph. D. Registrar and Professor of  
20 Chemistry.

See also "Administration."

- 1874 William Hailes, M. D. Lecturer on Pathological Anatomy,  
16 Histology and Fractures and Dislocations.

Lecturer on pathological anatomy 1874-5; Adjunct professor of pathological anatomy 1875-6, Professor of histology and pathological anatomy 1876-86, Professor of histology, pathological anatomy and clinical surgery 1886-9.

- Cyrus S. Merrill, M. D. Professor of Ophthalmology and  
14 Otology.

B. A. Amherst 1867, M. A. 1870; M. D. College of Physicians and Surgeons 1871, University of Vienna 1872, University of Heidelberg 1873; Consulting ophthalmic and aural surgeon, St Peter's Hospital; Attending ophthalmic and aural surgeon, Albany, Child's, Troy, North Adams Hospitals; Member American Ophthalmic and Otological Society, New York State Medical Society.

- 1880 Franklin Townsend, jr, M. D. Professor of Physiology.

- 10 B. A. Williams 1873, M. A. 1882; Lecturer on physiology 1880-1; Member New York State Medical Society, American Association of Obstetricians and Gynecologists.

- 1880 Frederic C. Curtis, M. D. Professor of Dermatology.

- 10 B. A. Beloit College 1866, M. A. 1869, M. D. College of Physicians and Surgeons 1870; Adjunct professor of dermatology, Albany Medical College 1880-4; Physician, St Peter's Hospital 1875; Physician, Albany Hospital 1877; Secretary Medical Society State of New York, Member American Public Health Association, American Dermatological Association.

- 1883 Henry Hun, M. D. Professor of Diseases of the Chest and  
7 Nervous System.

Ph. B. Sheffield Scientific School, Yale 1874; M. D. Harvard 1879; Assistant in physics, Sheffield Scientific School 1874-5; Interne, Boston City Hospital 1879; Physician, Albany, St Peter's and Child's Hospitals and Hospital for Incurables, Albany, and St Vincent's Female Orphan Asylums; Member American Neurological Association and American Anthropometrical Society, Secretary Association of American Physicians; Delegate New York State Medical Society; Author Guide to medical students in Europe, 1883, various articles in medical journals; Associate editor Annual of the universal medical sciences.

- 1884 Samuel R. Morrow, B. A., M. D. Professor of Anatomy  
6 and Orthopedic Surgery, 29 S. Hawk st.

B. A. Yale 1870, M. A. 1874; M. D. College of Physicians and Surgeons 1878; Tutor in Latin and Greek, Hopkins Grammar School, New Haven 1870-3; Tutor in Greek and mathematics, Yale 1873-6; House surgeon, Bellevue Hospital 1878-9; Lecturer adjunct to the Chair of Surgery 1884, Adjunct professor 1886-7, Lecturer on Anatomy 1887-9, Adjunct professor of Anatomy and Orthopedic Surgery 1889-; Visiting surgeon, St Peter's, Albany, and Child's Hospitals.

- 1884 Joseph Davis Craig, M. D. Demonstrator of Anatomy, 12  
4 Ten Broeck st.

B. A. Union 1880, M. A. 1883; M. D. Albany Medical College 1884; Curator of the Museum 1888-.

- George Gustave Lempe, M. D. Assistant Demonstrator of  
Anatomy, 57 Eagle st.

M. D. University of Göttingen; Professor of German, Lansingburgh Academy 1883-4; Attending surgeon, Albany Homœopathic Hospital.

- Howard Van Rensselaer, Ph. B., M. D. Lecturer on Materia  
Medica, 94 Columbia st.

Ph. B. Yale 1881; M. D. College of Physicians and Surgeons 1884; House physician, New York Hospital 1886; Instructor in nervous diseases and diseases of the chest, Albany Medical College 1889-; Attending physician, St Peter's Hospital, Hospital for Incurables, Home of the Friendless, Dispensary of the Child's Hospital.

- Herman Camp Gordinier, M. D. Lecturer on Anatomy of  
the Nervous System.

Instructor of physical diagnosis, Albany Medical College-; Member American Association for the Advancement of Science.

- Elmer Egbert Larkin, M. D. Instructor.

- 1889 Willis Goss Macdonald, M. D. Instructor in Surgery.

- 1 M. D. Albany Medical College 1887; House surgeon, Albany Hospital 1887-8; Editor Albany medical annals.

- James Edward Brennan, M. D. Instructor in theory and  
Practice of Medicine.

M. D. Albany Medical College 1889; Prosector to chair of anatomy 1889; House surgeon, Albany Hospital 1889-;



Albert Marsh, M. D. Instructor in Obstetrics, 212 State st.  
M. D. Albany Medical College 1885.

Robert Babcock, M. D. Instructor in Materia Medica and  
Therapeutics.

1889 George Emory Lochner, M. D. Instructor in Diseases of  
the Throat and Nose.

M. D. Albany Medical College 1889; Ex-interne, Albany Hos-  
pital 1888-90.

1888 Ezra Albert Bartlett, M. D. Instructor in Electro-  
3 Therapeutics.

B. A. University of Rochester 1870; M. D. Albany Medical Col-  
lege 1879; Author Cholera, its history, cause and prevention,  
1885.

Reuben D. Clark, M. D. Instructor in Chemistry.

Archibald Gow Losee, M. D. Instructor in Chemistry.

M. D. Albany Medical College 1889.

Thomas H. Willard, M. D. Instructor in Histology and  
Pathological Anatomy.

Robert Forgie Macfarlane, M. D. Instructor in Histology  
and Pathological Anatomy.

Member British Medical Association.

Theodore F. C. Van Allen, M. D. Instructor in Ophthal-  
mology and Otology.

M. D. Albany Medical College 1883; Assistant surgeon New  
York Eye and Ear Infirmary 1883-4; Attending ophthalmic  
and aural surgeon, St Peter's Hospital; Assistant to chair of  
ophthalmology and otology 1888-90.

Frank M. Clement, M. D. Instructor in Physiology.

M. D. Albany Medical College.

#### CLINICAL ASSISTANTS

Thomas Markley Trego, M. D.

William Pitney Brierly, M. D. Obstetrics.

Frederic William Loughran, M. D. Diseases Throat and Nose.

Charles Henry Moore, M. D. Ophthalmology and Otology.

Albert Wells Kilbourne, M. D.

James Benedict Kennah, M. D.

Frederick Dana Morrill, M. D.



## APPOINTED DURING YEAR

All the above instructors, lecturers, and clinical assistants were appointed during the year to serve one year.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Appointments on staffs of hospitals

St Peter's — James H. Tobin, house surgeon

M. D. Dickinson, house physician

Albany — William H. Happel

J. W. Kniskern

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Vander Veer prize for best report of surgical clinics, William N. Knowlton.

Hailes-Morrow prize for second best report of surgical clinics, Walter H. Conley.

Prof. C. S. Merrill, M. D., prize (An ophthalmoscopic case) for the best report of his eye and ear clinic, Thomas H. Flynn.

Dr T. W. Nellis prize (Case of surgical instruments) for best final examination on graduation, S. A. Mereness.

Townsend prizes for best report of lectures:

First, William J. Kernan.

Second, Michael F. Phelan.

Boyd prize for best first and second senior examinations, and best report in obstetrics:

First (Obstetrical case) John J. Sullivan.

Second (Obstetrical case) Edward Bernard Coburn.

Bigelow prize for best preparation of specimens of throat, William N. Knowlton.

Best specimens of head and nose, J. W. Joslin.

Dr Horace R. Powell Thesis prize (Case of antiseptic instruments)  
Arthur G. Root.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The three years' graded course now required in this college is arranged as follows: The studies of the first year are anatomy and histology, physics, inorganic and organic chemistry, physiology and materia medica, with laboratory work in chemistry and histology, dissection and attendance upon the general medical and surgical clinic. The final examination in inorganic chemistry, histology and materia medica, and an annual examination in organic chemistry, anatomy and physiology are held at the close of the term.

The studies of the second year are anatomy, including topographical anatomy and anatomy of the nervous system; pathological anatomy, physiology, organic chemistry, therapeutics, surgery, practice of medicine, obstetrics and gynecology, with laboratory work in pathological anatomy and clinics. At the end of this year final examinations are held in organic chemistry, anatomy, pathological anatomy, physiology and therapeutics.

The studies of the third year are practice of medicine, surgery, obstetrics, diseases of children, gynecology, diseases of the nervous system and of the eye, ear, skin, nose and throat, insanity and medical jurisprudence, with clinics and conferences. At the end of this year final examinations are held in practice, surgery and obstetrics.

Believing that instruction by recitation is as essential in medical as in literary colleges, the faculty have greatly enlarged and extended this department of the teaching. The recitations, which have hitherto been held during unoccupied hours in the evening, are now made part of the regular curriculum. Every study taught in the college by lectures is also made the subject of recitations, the ratio of the number of lectures to that of recitations being in general two to one. By thus making the recitations a part of the regular course of instruction, it is possible to make sure not only that they are properly conducted, and that the students thoroughly understand the lectures, but also to save the students from a considerable expenditure of money, and to do away with all outside quiz-classes, and with the objectionable system of cramming which such classes encourage.

## OUTLINES OF COURSES

## PRACTICE OF MEDICINE

*Theory and practice.*—Professor Ward delivers a systematic course of lectures, illustrated with pathological specimens. These lectures are supplemented by study in some standard text-book, and each week the students are examined on the subject-matter of the lectures of that week.

*Hygiene* is taught by lectures which have special reference to the needs of the general practitioner.

*Diseases of the heart and lungs*—Professor Hun delivers two lectures, illustrated with pathological specimens, each week on this subject, and Dr Van Rensselaer conducts a recitation each week on the subject-matter of the lectures.

*Clinical medicine*—Professor Ward holds a medical clinic each week in the amphitheatre of Albany Hospital, and Professor Hun holds a medical clinic each week in St Peter's or the Child's Hospital before the senior class. In these clinics the students have opportunities for the personal examination of patients; their examination and diagnosis being criticised by the professor.

*Auscultation and percussion and physical examination* is taught practically by Dr Gordinier to the junior class, which for this purpose is divided up into small groups.

*Diseases of nervous system*—Professor Hun delivers a didactic lecture, and also holds a clinic on this subject each week. At the clinic the students are trained practically in the examination of patients and in the method of arriving at a diagnosis. As a preparation to this course Dr Gordinier delivers to the junior class a lecture each week on the anatomy of the nervous system. These lectures are profusely illustrated by dissections of the central nervous organs, and by charts and plates.

*Insanity*—Professor Hun delivers a short course of lectures on this subject and holds clinics at the asylum connected with the alms-house, and at the Marshall Infirmary, Troy.

*Diseases of the skin*—Professor Curtis delivers each week on this subject a lecture, which is illustrated with plates and with a large number of patients.

## SURGERY

In the lectures on surgical pathology, the method by which the tissues are nourished in health having been first discussed, the



subjects of hypertrophy and atrophy are taken up, and then full consideration is bestowed upon the pathology of the methods by which wounds heal, and upon the processes of inflammation, suppuration, ulceration, gangrene, necrosis, septicæmia, pyæmia, poisoned wounds, etc. A considerable portion of the surgical course is devoted to pathology, for the reason that if students do not become well grounded in it during their college course, they are very unlikely to take it up after becoming occupied with the details of practice. The course on operative surgery includes all the usual operations. In the department of principles and practice of surgery, particular attention is paid to the subject of diagnosis, and all didactic teaching upon the various branches of surgery is richly illustrated in the clinical material furnished by the several well-regulated hospitals of the city. As in the past, it will be the aim to make the surgical clinics of the greatest value to the student. All the departments of the surgical chair make free use of the diagrams and specimens found in the museums of the college.

The subject of antiseptic surgery in all that pertains to the knowledge and direct application of the same is presented in the various operations. During the term the students have an excellent opportunity of seeing a number of cases of abdominal surgery for the relief of various forms of obstruction of the bowels and the removal of abdominal tumors.

*Fractures and dislocations*—This subject is treated in a practical manner, a thorough course of lectures being given, in which the various fractures and dislocations will be illustrated by a specially prepared skeleton. The employment of the various means for the reduction of dislocations and the preparation of splints and other surgical appliances, is taught in the lecture-room, and followed by clinical instruction at the hospital, senior students being required to examine and diagnose injuries, and to select, prepare and apply the proper dressings for reduction and for the retention of the appliances used.

*Ophthalmology and otology* are taught both by didactic and clinical lectures; the students being required to examine and diagnose the cases. Practical exercises are held in the use of the ophthalmoscope, the determination of glasses and the performance of the various operations.



*Orthopedic surgery* is taught by lectures combined with clinical instruction, the various hospitals furnishing an abundance of material for the illustration of this important subject.

#### OBSTETRICS, GYNECOLOGY AND DISEASES OF CHILDREN

This course will comprise a series of lectures on the science and art of midwifery; on gynecology, and also on the diseases of children. The lectures will be didactic and clinical. Recitations will be held once a week during the term.

In addition to the regular clinical lectures on gynecology, practical instruction in this department will be given the members of the senior class at the Albany hospital, the class being divided into sections in order to witness the operations. Provision will be made to enable members of the senior class to attend to one or more cases of obstetrics during the term.

#### CHEMISTRY

The course in this department includes lectures upon certain branches of physics—more especially light, heat and electricity—the principles of chemistry with its nomenclature and notation, the non-metals and metals, with their more important medical compounds, and organic chemistry, including the analysis of urine, toxicology, etc. These lectures are abundantly illustrated throughout. Recitations are held in each department, and more time than heretofore will be devoted to practical work in the chemical laboratory, which is now required during the first year.

#### ANATOMY

The course in anatomy consists of didactic lectures and recitations, with illustrations and demonstrations from the subject and preparations. Students are required to dissect during the first year under the direction of the demonstrator and assistant demonstrator of anatomy.

*Histology*—The course in histology, embryology and pathology consists of didactic lectures and recitations, with screen demonstrations, the exhibition of specimens, charts, etc. and practical work in the histological laboratory two hours each week, which is now required during the first year, and in pathological anatomy during the second year.

## MATERIA MEDICA

The lectures on materia medica and therapeutics are illustrated by the exhibition of officinal plants and prints, together with specimens of the various officinal compounds and preparations, and by the presentation of the different means and methods of medication resorted to in the treatment of disease. Special attention is given to the demonstration of the action of therapeutic agents, and to the manner of their administration. Recitations are frequently held; dissertations on remedies are prepared and read by members of the class, and the aim is to furnish a course not only didactic, but also thoroughly practical.

*Diseases of the throat and nose*—Clinics are held each week by the professor, and the student familiarized with the diseases of these parts, and made acquainted with the various methods in use for the examination and treatment of laryngeal and nasal disorders.

## PHYSIOLOGY

This branch is taught by means of didactic lectures, weekly recitations as well as frequent demonstrations upon the lower animals, the study being naturally divided into several departments, as physiological chemistry, physiological anatomy and histology, nutrition — comprising the subjects of digestion, absorption, secretion, the blood and its circulation — the nervous system, etc. The student thus can study the body “as a machine, learning the construction of its parts, the mechanism of their action, the materials with which it is supplied, the chemical transformation of its internal nutrition, as well as the phenomena which it exhibits in every department of the vital operations.”

## REQUIREMENTS FOR GRADUATION

The candidate must be 21 years of age, and exhibit a certificate from a physician or surgeon, duly authorized by law to practice his profession, that he has studied medicine and surgery under his instruction, after the age of 18, during a term of three years, including time spent in attending lectures, and he must present evidence of having complied with the law concerning preliminary examinations.

He must have attended not less than three regular courses of lectures, the last of which must have been at this college. Students

who have taken two or more courses of lectures at other accredited medical colleges, desiring to enter the third year (senior) class in this college, must pass an examination in the departments of anatomy, materia medica and therapeutics, physiology and chemistry, unless a satisfactory certificate of having passed a final examination in these branches is presented. Students who have attended one or more courses elsewhere may enter the second year (junior) class on passing an examination in inorganic chemistry, histology and materia medica, or on furnishing evidence that such final examinations have been passed at some other accredited medical college. Such entrance examinations will be equivalent to those held at the end of the second, and of the first year, respectively, in this college.

He must be of good moral character.

He must deliver to the registrar, six weeks before the end of the term, a thesis written by himself on some medical subject, and be prepared to defend it at his examination. Thesis must be written on paper 10 inches by eight inches in size, with a wide margin on the inside of each page.

He must pass a satisfactory examination in the several branches of medicine and surgery.

Regular and punctual attendance is required, and certificates of actual attendance given at the end of the term.

## BUILDINGS

Main building, three story brick, built 1816, three class rooms, 510 seats, floor area 20,690 sq. ft., value \$22,000.

## ADDITIONAL INFORMATION

Mrs Gertrude W. Vander Poel has endowed a prize in memory of her husband, the late S. Oakley Vander Poel, M. D., for many years a professor in this college. It consists of a practical working microscope and will be awarded to the senior student passing the best bedside examination in general medicine.

Dr A. B. Huested of Albany offers a prize consisting of Gross' complete pocket case of instruments to the junior student passing the best final examination.

## UNIVERSITY OF BUFFALO

*Buffalo*

CONSISTING OF

Medical Department

Buffalo College of Pharmacy

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

- 11 My 1846 Legislature chartered University of Buffalo.  
           1847 Medical Department opened.
- 4 Ap 1859 Legislature authorized university to establish an  
           academic department for young men; never  
           organized.
- 8 Mr 1886 College of Pharmacy organized, faculty and curators  
           appointed with power to conduct the college as a  
           separate department of the university.
- 20 S    “    College of Pharmacy opened.

## TRUSTEES

Chancellor, Hon. E. Carlton Sprague .....	Buffalo
Vice-Chancellor, Hon. James O. Putnam .....	“
Treasurer, Charles Cary, M. D. ....	“
Secretary, Frank M. Hollister .....	“
Mayor of the City of Buffalo, ex-officio .....	“
Edwin T. Evans .....	“
George Gorham .....	“
John C. Graves .....	“
Willis G. Gregory .....	“
George S. Hazard .....	“
Josiah Jewett .....	“
Robert Keating .....	“
Matthew D. Mann .....	“
Richard K. Noye .....	“
Roswell Park .....	“



Sherman S. Rogers.....	Buffalo
Lawrence D. Rumsey .....	"
T. Guilford Smith .....	"
Elbridge G. Spaulding .....	"

## MEDICAL DEPARTMENT

*Main and Virginia sts., Buffalo*

For historic sketch and trustees see foregoing.

## ADMINISTRATION

Figures in column at left give first year of service in University of Buffalo.

Chancellor, Hon. E. Carlton Sprague

Vice-Chancellor, James O. Putnam

1882 Dean, Mathew D. Mann, M. A., M. D. 37 Allen st.

B. A. Yale 1867, M. A. 1870; M. D. College of Physicians and Surgeons 1871; Lecturer, College of Physicians and Surgeons; Lecturer, Medical Department Yale; Attending gynecologist, Buffalo Female Hospital; Editor American system of gynecology; Author Manual of prescription writing.

1878 Secretary and Treasurer, Charles Cary M. D. 340 Delaware av.

M. D. University of Buffalo; Professor of anatomy, University of Buffalo 1878-89; Professor of materia medica 1889-; Attending physician, Buffalo General Hospital; Consulting physician, Fitch Dispensary; Member Association American Physicians, Medical Society of New York.

Registrar, Julius Pohlman, M. D. 539 Niagara st.

1888 Librarian, Sara P. Sheldon, 830 Main st.

## INSTRUCTION

Figures in column at left give first year of service in University of Buffalo and years spent in teaching.

Edward M. Moore, M. D. Emeritus Professor of Surgery, Rochester.

William H. Mason, M. A., M. D. Emeritus Professor of Physiology and Microscopy, Norwich, Ct.

- 1873 Enoch V. Stoddard, M. A., M. D. Emeritus Professor of  
17 Materia Medica and Therapeutics, Rochester.

B. A. Trinity 1860, M. A. 1863; M. D. Albany Medical College 1863; Member Medical Society State of New York; Fellow American Academy of Medicine.

- 1878 Charles Cary, M. D. Professor of Materia Medica, Thera-  
13 peutics and Clinical Medicine, 340 Delaware av.

See also "Administration."

- 1882 Matthew D. Mann, M. A., M. D. Dean and Professor of  
19 Obstetrics and Gynecology.

See also "Administration."

- 1883 Roswell Park, M. A., M. D. Professor of the Principles and  
15 Practice of Surgery and Clinical Surgery, 510 Dela-  
ware av.

B. A. Racine College 1872, M. A. 1875; M. D. Chicago Medical College 1876; Demonstrator of anatomy, Woman's Medical College, Chicago 1877-8; Adjunct professor of anatomy, Chicago Medical College 1878-82; Lecturer on Surgery, Rush Medical College, Chicago 1882-3; Member German Congress of Surgeons, American Surgical Association, American Andrological Association, American Orthopedic Association, American Medical Association.

Julius Pohlman, M. D. Registrar and Professor of Physiology.

See also "Administration."

- 1887 Charles G. Stockton, M. D. Professor of the Principles and  
8 Practice of Medicine and Clinical Medicine, 436 Frank-  
lin st.

M. D. University of Buffalo 1878; Professor of materia medica and therapeutics, Niagara University 1883-7; Member Association American Physicians, New York State Medical Association, American Medical Association.

- 1884 John Parmenter, M. D. Professor of Anatomy, 372 Frank-  
6 lin st.

Surgeon, Fitch Hospital; Assistant Surgeon, General Hospital.

- 1889 Herbert M. Hill, Ph. D. Professor of Chemistry and  
11 Toxicology, 127 14 st.

B. A. Hamilton 1879, M. A. 1882, Ph. D. 1890; Professor of natural science and higher mathematics, Watertown High School 1880-9; Professor of general and analytical chemistry, Buffalo College of Pharmacy 1890-; Member American Association for the Advancement of Science, Association American Microscopists.

- 1880 Judson B. Andrews, M. A., M. D. Professor of Psycho-  
17 logical Medicine.

B. A. Yale 1855, M. A. 1858; Medical officer in military service 1861-5; Assistant medical officer, Utica State Hospital 1867-80; Superintendent Buffalo State Hospital 1880-; Member New York State Medical Association, Association Medical Superintendents, American Institutions for Insane; Associate editor American journal of insanity; Author of monographs on medicine.

- 1881 Lucien Howe, M. A., M. R. C. S. Clinical Professor of  
Ophthalmology.

B. A. Bowdoin 1870, M. A. 1878; M. D. Long Island College Hospital, 1871, Bellevue Hospital Medical College 1872; M. R. C. S. 1873; Surgeon-in-charge, Buffalo Eye and Ear Infirmary 1876-; Member Ophthalmologischen Gesellschaft, Deutscher Naturforscher und Aerzte, Royal Microscopical Society, L'Association Française pour l'Avancement des Sciences, American Association for the Advancement of Science, American Ophthalmological Society.

- 1882 M. B. Folwell, M. D. Clinical Professor of Diseases of  
10 Children, 713 Delaware av.

B. A. Hobart 1861, M. A. 1865; M. D. University of Buffalo 1867; Member American Medical Association, Medical Society of the State of New York.

- 1885 Ansley Wilcox, B. A. Professor of Medical Jurisprudence.  
6 B. A. Yale 1874.

- 1882 D. W. Harrington, M. D. Clinical Professor of Genito-  
8 urinary and Venereal Diseases, 1430 Main st.

Consulting surgeon, Buffalo General Hospital; Member American Medical Association, New York State Medical Association.

- 1887 Bernard Bartow, M. D. Clinical Professor Orthopedic Sur-  
4 gery, 220 Franklin st.

M. D. University of Buffalo 1874; Member New York State Medical Society, American Orthopedic Association.

- 1887 F. Whitehill Hinkel, M. A., M. D. Clinical Professor of  
4 Laryngology, 305 Delaware av.

B. A. Lafayette College 1879, M. A. 1882; M. D. University of Pennsylvania 1882; Member American Laryngological Association, Medical Society of the State of New York; Collaborator Journal of the respiratory organs.

- 1886 Stephen Y. Howell, M. A., M. D. Professor of Pathology  
5 and Director of Pathological Laboratory, 164 Franklin st.

B. A. Columbia 1877, M. A. 1880; M. D. College of Physicians and Surgeons 1880, Hahnemann Medical College, Pa.; Translator Microscopical technology.

Ernest Wende, B. S., M. D. Clinical Professor of Dermatology.

- 1888 W. E. Ford, M. A., M. D. Professor of Electro-therapeutics,  
3 See also University of the City of New York, Department of Medicine.

- 1885 James Wright Putnam, M. D. Clinical Professor of Dis-  
6 eases of the Nervous System, 388 Franklin st.

M. D. University of Buffalo 1882; Lecturer on diseases of the nervous system 1885-; Member New York State Medical Association; Associate editor Buffalo medical and surgical journal.

William C. Phelps, M. D. Demonstrator of Anatomy, 146 Allen st.

Member New York State Medical Association, American Medical Association.

- 1887 William Henry Bergtold, M. D. Adjunct Professor of  
5 Pathology and Lecturer on Minor Surgery and Curator of Museum, 56 Allen st.

M. D. University of Buffalo 1886; Assistant pathologist, Medical Department University of Buffalo 1887-90, Curator of museum 1888-; Assistant pathologist, Buffalo General Hospital; Assistant attending physician, Buffalo Orphan Asylum; Member American Ornithologists Union.

- 1890 Fred B. Willard, M. D. Assistant Demonstrator of Anatomy.  
Visiting gynecologist, Fitch Provident Dispensary.

- 1884 Eli H. Long, M. D. Lecturer on Special Therapeutics, 1385  
8 Main st.

M. D. University of Buffalo 1882; Professor of materia medica, Department of Pharmacy; Author Tables for the doctor and druggist.

- 1885 William C. Barrett, M. D., D. D. S., M. D. S. Lecturer on  
6 Oral Pathology, 208 Franklin st.

M. D. S. State Dental Society 1869; M. D. University of Buffalo 1880; D. D. S. Pennsylvania Dental College 1881; Professor of anatomy and pathology, Lake Forest University dental department; Member International Medical Congress 1881-7, American Microscopical Society, American Dental Association; Editor Independent practitioner.



P. W. van Peyma, M. D. Adjunct Professor of Obstetrics.

M. D. University of Buffalo 1872. Editor Buffalo medical and surgical journal.

1887 De Lancey Rochester, B. A., M. D. Adjunct Professor of  
5 the Principles and Practice of Medicine, 469 Franklin st.

B. A. Harvard 1881; M. D. University of Buffalo 1884; Lecturer on physiology, Medical Department University of Buffalo 1887-9, Lecturer on physical diagnosis 1890-; Member American Association for the Advancement of Science; Associate editor Buffalo medical and surgical journal.

Elmer Starr, M. D. Lecturer on Ophthalmology.

1890 Irving M. Snow, M. D. Lecturer on Diseases of Children  
2 and Instructor in Physiology, 371 Porter av.

Physician, Fitch Dispensary, Home for Friendless and Fresh Air Mission.

#### PROMOTIONS

John Parmenter, M. D. Professor of anatomy from lecturer on the same.

Herbert M. Hill, M. A., Ph. D. Professor of chemistry and toxicology from lecturer on the same.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

#### REQUIREMENTS FOR ADMISSION

See table 3.

#### COURSES OF STUDY

From eight to 12 hours are daily devoted to instruction, comprising: 1—Lectures in college buildings; 2—Work in chemical, pathological and pharmaceutical laboratories; 3—Dissection; 4—Clinical lectures at the General Hospital, at the Fitch Accident Hospital, and at the Eye and Ear Infirmary.

#### DEPARTMENTS OF INSTRUCTION

##### MATERIA MEDICA AND THERAPEUTICS

A complete collection of the different medicinal agents in their various forms is at the disposal of this department and will be utilized to make the student familiar with the drugs; the physiolog-

ical action and the therapeutical application of medicines will be carefully and systematically treated in the course of lectures and illustrated as much as possible by experiments. A pharmacological laboratory supplements the lectures by providing instruction to the students in the preparation of the different classes of drugs.

#### OBSTETRICS AND GYNECOLOGY

This department has a collection of diagrams and alcoholic and dry preparations furnished by the college museum to illustrate the lectures. The various forms of obstetrical instruments are shown and their uses explained; demonstrations on the manikin will be made, and each member of the graduating class is required to practice the different manipulations on the manikin under the eye of the professor.

Gynecology receives careful attention by systematic lectures illustrated with diagrams and specimens and clinics at the general hospital, where the student finds an opportunity to study the practical part of this subject, and where he can see almost every form of operation pertaining to this department in the course of the session.

#### PRINCIPLES AND PRACTICE OF SURGERY

The course in this department consists of lectures, operations on the cadaver and clinical instructions. Regular surgical clinics are held twice a week at the general hospital, but opportunities will be given to the senior class to witness operations almost every day, and to visit the wards of the general and the Fitch accident hospitals daily, under the direction of the professor of surgery and the surgical staff. The results of operations performed, and the symptoms and treatment of the large variety of surgical and accident cases treated here during the year, are thus placed directly before the student, and he obtains in a practical and systematic manner the broad principles of surgery and antiseptic treatment so necessary for the success of the practitioner of to-day.

#### PHYSIOLOGY

The system of instruction in this department has been adapted with special reference to its practical application. Teaching by vivisectional demonstrations, so far as they can be performed before a class, was first introduced in the United States by Professor John C. Dalton, and it has been followed ever since with

the most gratifying results. Demonstrations of this kind take the place of lectures whenever the subject under discussion can be made plain by an object lesson.

#### PRINCIPLES AND PRACTICE OF MEDICINE

The didactic lectures delivered in this department at the college building and the clinical lectures at the general hospital are supplemented by daily clinics. In order to make the instruction thorough as well as practical, and to give the students the fullest advantage of bedside studies, sections of the graduating class will be taken every day through the wards of the general hospital in charge of the clinical professors; here they are requested to diagnose disease, to describe symptoms, to prescribe treatment, and to apply the information received at former lectures. The different phases of disease and the results of certain lines of treatment are in this manner clearly brought before the student, and as the clinical material at the hospital is abundant throughout the year, there will be opportunities to examine and treat practically nearly every form of disease that may occur in general practice.

#### CHEMISTRY AND TOXICOLOGY

The course consists of experimental lectures and laboratory work. Special attention is given to the latter, and the chemical laboratory is well equipped, and the work well systematized for the purposes of medical instruction. There are three distinct courses: 1—An elementary course in which the student is taught to recognize the more common bases, acids and salts; 2—A course in urinary analysis, comprising the physical character of urine and the detection and quantitative determination of normal and abnormal constituents, and 3—A course in the analysis of the more common poisons.

#### ANATOMY

The lectures in anatomy are fully illustrated by skeletons, diagrams, models, manikin and recent dissections. Living models are used as much as possible in the lectures bearing upon surgical anatomy, and special attention is given to the application of practical anatomy to medicine and surgery.

#### MEDICAL JURISPRUDENCE

Professor Ansley Wilcox will deliver a course of lectures upon medical expert testimony, insanity in its legal relations, the law of wills and the legal rights and obligations of physicians.



## PATHOLOGY AND MICROSCOPY

The work in this department consists of lectures and laboratory instruction. In the former the pathological specimens from the college museum and others obtained from post-mortem examinations are utilized for illustration. In the latter the student is taught the uses of the microscope and the preparation of microscopical specimens, such as hardening of tissues, cutting, staining and mounting of sections, and he learns to differentiate between normal and pathological histology. The laboratory is fully equipped for such instruction, and satisfactory work is necessary for graduation.

## HYGIENE

Preventive medicine as a branch of medicinal science has commanded more and more recognition with the progress of bacteriological investigations, and a knowledge of hygiene for the preservation of the public as well as the individual health is at present indispensable to the practicing physician. The constantly increasing demand for qualified health officers and sanitary inspectors testifies to the fact that the public fully appreciates the benefits that can be derived from a systematic application of hygienic laws.

## INSANITY

Professor Andrews will deliver a course of lectures on psychological medicine; his long experience as superintendent of the state hospital in Buffalo enables him to speak authoritatively upon the causes and symptoms of insanity and the general care and treatment of the insane. The state hospital with over 800 and the county asylum with about 500 patients offer opportunities for the practical study of insanity if a student desires to make this branch of medicine a specialty.

## OPHTHALMOLOGY

Professor Howe combines his lectures with clinical instruction by presenting to the classes large numbers of patients from the eye and ear infirmary illustrating the types of the different diseases; in addition, sections of the graduating class can attend the clinics at the infirmary every day and learn the uses of the instruments for the examination of eye and ear, examine patients themselves and diagnose and prescribe under the supervision of Professor Howe or his assistants.



## DISEASES OF THE SKIN

Professor Wende gives a systematic course of lectures in this department fully illustrated by diagrams, microscopical preparations and patients from the Fitch dispensary. The clinics held in that institution are supplementary to the lectures delivered at the college building, and the students find there an abundance of material to study at first hand all the types of these troublesome forms of disease.

## DISEASES OF THE NERVOUS SYSTEM

Dr James W. Putnam will lecture on this important department of medicine, and an abundance of clinical material from the hospitals and dispensaries, as well as from his private practice, is always at his disposal for the instruction of the student.

## PRACTICAL ANATOMY

The dissecting rooms will be open morning and evening during both terms, under the immediate supervision of the demonstrator and assistant demonstrator of anatomy. They will make special dissections, and hold frequent examinations for the benefit of the student. The numerous institutions in and about Buffalo insure an abundant supply of material. The dissecting rooms are large, well lighted and ventilated, and afford every convenience for the prosecution of the study of anatomy.

## DISEASES OF CHILDREN

Professor Folwell will give one lecture a week on this subject.

## DISEASES OF THE THROAT AND NOSE

Professor F. Whitehill Hinkel will give a course of lectures on diseases of the throat and nose, which will be illustrated by charts and selected cases. The manipulation of instruments will be demonstrated, and opportunity afforded to acquire practical experience in their use.

## ORTHOPEDIC SURGERY

Professor Bartow's lectures on orthopedic surgery will include the course of instruction usually covered by the text-books on this subject. Illustration of the lectures by cases, diagrams and orthopedic appliances will be liberally furnished.

## REQUIREMENTS FOR GRADUATION

The degree of doctor of medicine is conferred in accordance with a vote of the council of the university on the joint recommendation of the faculty and curators. The following are the requisites for graduation:

21 years of age; a good moral character; satisfactory evidence of having studied medicine for three years under the tuition of a regular practitioner or practitioners; dissection of an entire subject, either here or elsewhere; evidence of having attended a laboratory course in pathology and in chemistry; two full courses of lectures, the last having been at this institution. The tickets of irregular colleges will not be recognized. The candidate must deliver to the secretary, on or before the first of January, a thesis, composed and written by himself, on some medical subject, which must be examined and approved by the faculty. He must have passed an examination in the following enumerated departments, which shall have been satisfactory to the faculty and curators of the university: Theory and practice of medicine, surgery, obstetrics and gynecology, therapeutics and materia medica, hygiene, anatomy, physiology, chemistry, pathology and medical jurisprudence. After this session attendance at three full courses of lectures will be necessary, and a satisfactory examination in the pharmaceutical laboratory will be added to the requirements for graduation.

## BUILDINGS

Main building, four story, Medina sand stone, built 1850, four class rooms, 550 seats, value \$20,000.

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## NEW YORK COLLEGE OF VETERINARY SURGEONS

332 E. 27 st., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
6 Ap	1857	Incorporated by legislature with power to confer degree of V. S.
My	1889	Alumni Association of the New York College of Veterinary Surgeons incorporated.

## TRUSTEES

Elected

1878	President, William T. White, M. D.	130 E. 30 st.
1885	Secretary, Cornelius E. Billington, M. D.....	106 Madison av.
1863	George W. Busted.....	162 E. 23 st.
1878	W. T. Comstock.....	23 Warren st.
1879	John M. Guiteau.....	28 E. 28 st.
1883	Edwards Hall, M. D.....	17 E. 66 st.
1883	Samuel S. Purple, M. D.....	36 W. 22 st.
1883	John H. Hinton, M. D.....	41 W. 32 st.
1883	Hon. G. L. Ingraham.....	15 E. 66 st.
1884	Charles R. Gill, M. D.....	West Park
1885	William R. Hunt.....	438 W. 34 st.
1887	Lewis Edwards.....	12 W. 33 st.
1887	C. E. Stammler, M. D.....	132 Ewen st., Brooklyn
1888	R. M. Stivers.....	148 E. 31 st.
1888	James G. McMurray.....	408 Fourth av.

## CENSORS

1887	Austin Flint, M. D., LL. D.
1887	L. V. Plageman, M. R. C. V. S.
1890	F. A. Putnam, M. D.

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. College of Veterinary Surgeons

1883	President, William T. White, M. D.,	130 E. 30 st.
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M. D. New York Medical College 1855; Surgeon, Panama Railroad 1856-65, Presbyterian Hospital 1876-81, Charity Hospital 1876-, Demilt Dispensary; Member American Medical Association, Medical Society of the State of New York, New York State Medical Association; Editor Medical register of New York, New Jersey and Connecticut.

1879	Treasurer, John M. Guiteau,	28 E. 28 st.
1889	Secretary, Harry D. Gill,	V. S.

V. S. New York College of Veterinary Surgeons 1884, Inspector U. S. Bureau Animal Industry 1887.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. College of Veterinary Surgeons and years spent in teaching.

1883 William T. White, M. D. President, 130 E. 30 st.

See also "Administration."

1877 David C. Comstock, M. D. Professor of Descriptive and  
14 Comparative Anatomy, 83 Lexington av.

1882 J. M. Heard, M. R. C. V. S. Professor of Surgery, 119  
8 W. 56 st.

M. R. C. V. S. 1871; Member Academy of Comparative Medicine and Surgery; Author, Horse shoeing, past and present, Horses' teeth.

1888 C. B. Michener, V. S., D. V. S. Professor of Cattle Pathology  
10 and Obstetrics, 360 W. 55 st.

Chief U. S. government inspector, Port of New York.

1886 George A. Lyons, M. D. Professor of Histology and  
Microscopy.

M. D. Bellevue Hospital Medical College 1877.

1888 William Rice Ballou, M. D. Professor of Equine Anatomy.

5 M. D. Bellevue Hospital Medical College, and Bowdoin Medical College 1886; Surgeon, Bellevue Dispensary; Lecturer on genito-urinary surgery, New York Polyclinic; Author Equine anatomy and physiology.

1887 B. H. Searing, M. D. Professor of Chemistry and Hygiene,  
3 316 W. 28 st.

B. S. Cornell 1883; M. D. College of Physicians and Surgeons 1885.

1887 Hermann M. Biggs, M. D. Professor of Comparative  
7 Physiology, 58 E. 25 st.

B. A. Cornell 1882; M. D. Bellevue Hospital Medical College 1883; Lecturer on general pathology and pathological anatomy and demonstrator of anatomy, Bellevue Hospital Medical College 1886-; Instructor, Carnegie Laboratory 1885-; Pathologist, New York City Health Department and Charity Hospital; Acting pathologist, Bellevue Hospital; Member New York State and American Medical Associations; Translator and editor Huepple's methods of bacteriological investigation.



- 1889 Harry D. Gill, V. S. Professor of Theory and Practice of Veterinary Medicine, 332 E. 27 st.

See also "Administration."

- 1884 A. S. Heath, M. D. Lecturer on the Breeding and Feeding  
15 of Domestic Animals.

M. D. University of the City of New York 1844, D. V. S. 1883; Professor of bovine diseases and comparative medicine and surgery, Columbia 1880-3; Assistant surgeon, U. S. Navy 1861-2; Surgeon, New York Volunteers 1862-4, Associate editor American agriculturalist.

- 1888 Frederick Thomas Reyling, M. D. Lecturer on Materia  
2 Medica and Therapeutics and Histology, 210 E. 50 st.

See also University of the City of New York, Department of Medicine.

- 1889 Robert J. Carlisle, M. D. Lecturer on General Pathology and Pathological Anatomy.

M. D. Bellevue Hospital Medical College 1884; Visiting physician, Hospital, Workhouse and Almshouse.

- 1889 J. S. Hopkins, M. D. Lecturer on Ophthalmology, 150  
4 W. 11 st.

M. D. University of the City of New York 1882; Instructor in ophthalmology, University of the City of New York, Medical Department 1884-5.

- 1889 John M. Byron, M. D. Lecturer on Bacteriology and State  
2 Medicine, 215 Second av.

See also University of the City of New York, Department of Medicine.

- 1890 Stacy B. Collins, M. D. Lecturer on Medical Jurisprudence.

M. D. Jefferson Medical College, Pa. 1876.

Alfred B. Carroll, M. D. Lecturer on Hygiene.

M. D. University of the City of New York 1855.

- 1890 Robert Richards, V. S. Demonstrator of Anatomy, 332 E.  
27 st.

V. S. New York College of Veterinary Surgeons 1888.

#### VACANCIES

J. Hamill, Lecturer on practical horse-shoeing. Removed by trustees.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Samuel S. Brooks. . . . . Paterson, N. J.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Gold medal awarded by faculty for best general examination, Peter A. Davison, Hamilton, N. J. . . . .	\$25
Silver medal awarded by Faculty for best junior examination, August C. Hassloch, Ph. D., New York. . . . .	10
Silver medal awarded by Prof. Hamill for second best junior examination, George S. Fuller, Freemont, O. . . . .	? 25
Silver medal awarded by Prof. Hamill for third best junior examination, William J. McKinney, Londonderry, Ireland. . . . .	? 25
Silver medal awarded by Prof. Gill for best examination in practice, Sherman William Mount, Milwaukee, Wis. . . . .	? 10
Comstock prize (case of veterinary instruments) awarded by Prof. Comstock, C. W. Braentigam, Ph. D., Brooklyn. . . . .	? 15
Jenkins prize (veterinary books) awarded by W. R. Jenkins, H. K. Miller, Manheim, Pa. . . . .	? 10

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

## DESCRIPTIVE AND COMPARATIVE ANATOMY

Professor Comstock gives two didactic lectures a week throughout the term, which are illustrated by dissections, anatomical preparations, models and drawings. Abundant opportunity is offered in the dissecting-room for the thorough study of the subject.

## EQUINE ANATOMY

Professor Ballou lectures three times a week on the anatomy of the horse.

Students are expected to dissect all the parts of a subject during the term, under the direction of the demonstrator of anatomy.

## COMPARATIVE PHYSIOLOGY

Professor Biggs lectures three times a week throughout the term, illustrating physiological actions by demonstrations on living animals.

## CHEMISTRY AND TOXICOLOGY

Professor B. H. Searing gives three lectures a week. The course, which is divided into that of junior and senior, extends over the whole field of inorganic and organic chemistry. All the fundamental principles of chemistry are presented, and each important element and its chief compounds carefully studied.

## PRINCIPLES AND PRACTICE OF SURGERY

A course of didactic lectures on this subject is delivered throughout the term by Professor Heard, who also gives one or more surgical clinics a week in the hospital. Operations are performed before the class.

## THEORY AND PRACTICE OF VETERINARY MEDICINE

Professor Gill gives three lectures a week on the theory and practice of veterinary medicine.

## CATTLE PATHOLOGY AND OBSTETRICS

Professor Michener lectures twice a week. Students have the opportunity of examining animals affected with contagious diseases, before and after slaughtering.

## HISTOLOGY AND MICROSCOPY

Professor Lyons gives two lectures a week, making preparations and exhibitions of healthy and diseased tissues, secretions, etc.

## MATERIA MEDICA AND THERAPEUTICS

Dr Reyling lectures twice a week on the physiological action of drugs and chemistry. Drugs are presented in their crude state, familiarizing the student with their appearance and identification.

## OPHTHALMOLOGY

Dr Hopkins gives one lecture a week on the anatomy and the diseases of the eye, describing and performing the various operations appertaining to their treatment, and gives the student an

opportunity to familiarize himself with the use of the ophthalmoscope.

Dr Heath gives a series of lectures on the different breeds of cattle and the best methods of feeding and caring for them.

#### PATHOLOGY

Dr Carlisle lectures twice a week on general and comparative pathology.

#### HOSPITAL

The hospital, under the charge of Drs Gill and Richards, affords the students an opportunity of practically studying the various diseases to which domestic animals are liable, and their treatment, and also to witness surgical operations.

### REQUIREMENTS FOR GRADUATION

The candidate must be 21 years of age; have attended two full courses of lectures, the last being in this college (graduates in medicine are required to attend one regular session); must present a certificate of three years' study, inclusive of the time of attendance on the veterinary lectures; must possess a good English education; proper testimonials of character; and pass a satisfactory examination in each of the seven departments of instruction, viz.: Anatomy, physiology, chemistry, materia medica and therapeutics, theory and practice of medicine, surgery, bovine pathology and obstetrics. He must present a certificate of a course of dissections, and a thesis on some veterinary medical subject in his own handwriting.

### BUILDINGS

Main building, three story brick, built 1877, total floor area 7,200 sq. ft., 100 seats, value \$18,000; the first floor used as a hospital, the other two floors used for lecture rooms, laboratories and dissecting room.



## LONG ISLAND COLLEGE HOSPITAL

*Brooklyn*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
6 Mr	1858	Incorporated by legislature with usual powers of medical college.

## TRUSTEES

Elected

1858	President, Thomas H. Rodman.....	Brooklyn
1875	Treasurer, Frank E. Dodge .....	"
1864	Secretary, Hon. William J. Osborne.....	"
1858	Hon. Samuel Sloan .....	New York
1860	Frederick W. Kentgen .....	Brooklyn
1867	Charles H. Christmas.....	"
1867	Richard J. Dodge.....	"
1872	Henry D. Polhemus .....	"
1877	George C. Blanke.....	"
1881	G. Theodore Duckwitz.....	"
1881	Henry W. Maxwell .....	"
1881	Thomas S. Moore .....	"
1881	John F. Praeger .....	"
1882	John S. Frothingham .....	"
1882	William B. Kendall.....	"
1883	William A. Abbott.....	"
1883	Robert H. Riley.....	"
1884	Charles W. West .....	"
1886	Cornelius N. Hoagland, M. D .....	"
1887	George G. Hopkins, M. D .....	"
1889	Z. T. Emery, M. D.....	"

## APPOINTED DURING YEAR

1890	Charles W. Ide .....	"
1890	Joseph H. Lester .....	"
1890	Samuel Rowland .....	"

## VACANCIES

Reuben W. Ropes, Vice-president, died 31 Jl 1890

## ADMINISTRATION

Figures in column at left give first year of service in Long Island College Hospital.

1870 Dean, Alexander J. C. Skene, M. D.

M. D. Long Island College Hospital 1863; Professor of gynecology, New York Post Graduate School 1884-6; President American Gynecological Society-; Member British Gynecological Society, Société Royal des Sciences Medicales et Naturelles, Belgium; Author Treatise on the diseases of women, 1888, Education and culture as related to the health and diseases of women, 1889.

1870 Treasurer, Jarvis S. Wight, M. A., M. D.

B. A. Tufts College 1861, M. A. 1882; M. D. Long Island College Hospital 1864; Professor of materia medica and therapeutics 1870-; Professor of principles and practice of surgery and clinical surgery 1876-86; Professor of operative and clinical surgery 1886-; Member Medical Society of the State of New York, American Medical Association, British Medical Association, Society Medical Jurisprudence and State Medicine; Author Treatise on myodynamics, 1881, In memoriam Professor Frank Hastings Hamilton, 1888, A memorial of O. W. Wight, 1890.

1873 Secretary, Joseph Howard Raymond, M. A., M. D., 173 Joralemon st.

B. A. Williams 1866, M. A. 1869; M. D. Long Island College Hospital 1868, College of Physicians and Surgeons 1869; Lecturer on physiology and hygiene, Brooklyn Normal School 1886-; Vice-president American Public Health Association 1890; Editor Brooklyn Medical Journal, 1888-.

## INSTRUCTION

Figures in column at left give first year of service in Long Island College Hospital and years spent in teaching.

1864 George W. Plympton, M. A., M. D. Emeritus Professor of  
38 Physics, Chemistry and Toxicology, 127 Herkimer st.

C. E. Rensselaer Polytechnic 1847; M. A. Hamilton 1854; M. D. Long Island College Hospital 1880; Professor of physical science and engineering, Brooklyn Collegiate and Polytechnic Institute 1863-; Professor of physics and engineering, Cooper Union Night Schools 1869-; Director of Night Schools 1879-; Author Aneroid and how to use it, 1875; Translator, Determination of rocks, from the French of Jannetaz 1887, Sinkages, from the French of De Roos, 1880; Editor Van Nostrand's engineering magazine, 1870-86.

- 1868 Corydon L. Ford, M. D., LL. D. Emeritus Professor of  
48 Anatomy.

M. A. Middlebury College 1859; M. D. Geneva Medical College 1842; LL. D. University of Michigan 1881; Demonstrator of anatomy, Geneva Medical College 1842-9; Demonstrator of anatomy, Buffalo Medical College 1846-52; Professor of anatomy and physiology, Castleton Medical College, Vermont 1849-61; Professor of anatomy, University of Michigan 1854-60, Professor of anatomy and physiology 1860-; Professor of anatomy and physiology, Berkshire Medical College 1860-7; Professor of anatomy and physiology, Medical School of Maine 1864-70; Professor of anatomy, Long Island College Hospital 1868-86, Emeritus professor of anatomy 1886-; Member American Medical Association, American Public Health Association.

- 1870 Alexander J. C. Skene, M. D. Dean and Professor of the  
21 Medical and Surgical Diseases of Women.

See also "Administration."

- 1870 Jarvis S. Wight, M. A., M. D. Professor of Operative and  
20 Clinical Surgery.

See also "Administration."

- 1873 Joseph H. Raymond, M. A., M. D. Professor of Physiology  
17 and Sanitary Science.

See also "Administration."

- 1874 John D. Rushmore, B. A., M. D. Professor of Surgery,  
18 129 Montague st.

B. A. Williams 1867; M. D. College of Physicians and Surgeons 1870; Lecturer on elementary surgery, Long Island College Hospital 1874-6, Lecturer on materia medica and therapeutics 1876-80, Professor of principles and practice of obstetrics 1880-2, Professor of surgery 1882-; Member American Medical Association, American Surgical Association, American Ophthalmological Society, American Otological Society.

- 1876 John A. McCorkle, M. D. Professor of the Principles and  
16 Practice of Medicine and Clinical Medicine.

M. D. University of Michigan 1873.

- 1880 Charles Jewett, M. A., M. D. Professor of Obstetrics and  
11 Diseases of Children, 307 Gates av.

B. A. Bowdoin College 1864, M. A. 1867; M. D. College of Physicians and Surgeons 1871; Member British Gynecological Society, American Gynecological Society, New York State Medical Society, American Academy of Medicine; Author Childbed nursing, List notes in obstetrics.

- 1885 Frank Ferguson, M. D. Professor of Histology and Patho-  
6 logical Anatomy.

M. D. Long Island College Hospital 1880.

- 1880 Elias Hudson Bartley, B. S., M. D. Professor of Chemistry  
17 and Toxicology, 21 Lafayette av.

B. S. Cornell 1873; M. D. Long Island College Hospital 1879; Instructor in chemistry, Cornell 1873-5; Professor of chemistry, Swarthmore College 1875-8; Lecturer on chemistry and assistant to chair of diseases of children, Out-patient Dispensary, Long Island College Hospital 1880-5; Professor of chemistry and toxicology and lecturer on diseases of children 1886-; Chief chemist, Brooklyn Health Department 1882-8; Attending physician, Sheltering Arms Nursery 1886-; Member American Association for the Advancement of Science, American Chemical Society, American Public Health Association; Author Bartley's medical chemistry; Editor Department preventive medicine, Brooklyn medical journal, 1888.

- 1880 Frank E. West, M. A., M. D. Professor of Materia Medica  
11 and Therapeutics, and Clinical Medicine, 29 Schermerhorn st.

B. A. Williams 1872, M. A. 1875; M. D. Long Island College Hospital 1876; Instructor in diseases of the chest 1880-6; Instructor in diseases of the kidneys 1884-6; Professor of materia medica and therapeutics 1886-; Professor of clinical medicine 1887-; Visiting physician, Long Island College Hospital; Consulting physician, Brooklyn Throat Hospital; Member New York State Medical Society.

- 1886 Edwin A. Lewis, M. A., M. D. Professor of Anatomy.  
7 B. A. Yale 1870, M. A. 1873; M. D. Bellevue Hospital Medical College 1873.

- 1886 Joshua M. Van Cott, jr., M. D. Professor of Histology and  
5 Pathological Anatomy, and Pathologist, 188 Henry st.

Editor Progress in pathology, Brooklyn medical journal.

Hon. Calvin E. Pratt, Professor of Medical Jurisprudence.

- 1886 Jonathan S. Prout, M. D. Clinical Professor of Diseases of  
20 the Eye, 26 Schermerhorn st.

M. D. National Medical College 1856; Member American Ophthalmological Society, American Otological Society.



- 1870 Arthur Mathewson, M. D. Clinical Professor of Diseases of  
20 the Ear, 139 Montague st.

B. A. Yale 1858, M. A. 1865; M. D. University City of New York 1861; Lecturer on diseases of the eye and ear, Yale Medical School 1876; Lecturer on diseases of the eye and ear, Long Island College Hospital 1870-86, Professor 1886-; Assistant Surgeon U. S. Navy 1861, Surgeon 1865; Member American Ophthalmological and Otological Societies, New York State Medical Society; Translated and edited with notes Prof. Politzer's *Beleuchtungsbilder des Trommelfells im gesunden und kranken Zustand*.

- 1886 Samuel Sherwell, M. D. Clinical Professor of Diseases of the  
12 Skin, 33 Schermerhorn st.

M. D. Bellevue Hospital Medical College 1868; Lecturer on dermatology, Long Island College Hospital 1878-86; Visiting physician, Brooklyn Hospital; Surgeon, skin and throat department, Brooklyn Eye and Ear Hospital; Member American Dermatological Association.

- 1886 Thomas R. French, M. D. Clinical Professor of Diseases of  
12 Throat and Nose, 469 Clinton av.

M. D. College of Physicians and Surgeons 1871; Fellow American Laryngological Association.

- 1879 Henry N. Read, M. D. Clinical Professor of Diseases of  
11 Children, 541 Henry st.

M. D. Long Island College Hospital 1870; Lecturer on diseases of children, Long Island College Hospital 1879-82, Clinical professor 1882-; Resident Physician, Long Island College Hospital 1870-2, Adjunct physician, 1872-84, Attending physician 1884-; Attending physician, Sheltering Arms Nursery; Member American Medical Association.

- 1886 Henry W. Rand, M. A., M. D. Clinical Professor of Diseases  
8 of the Genito-urinary Organs and Lecturer on the Principles of Surgery, 147 Clinton st.

B. A. Acadia College 1873, M. A. 1878; M. D. Bellevue Hospital Medical College 1877.

- 1886 John C. Shaw, M. D. Clinical Professor of Diseases of the  
5 Mind and Nervous System.

M. D. College of Physicians and Surgeons 1874; Consultant, Hudson River State Asylum for Insane, Medical Superintendent, Kings County Insane Asylum; Consulting neurologist, Long Island College Hospital, St. Catherine's Hospital; Member American Neurological Association; Collaborator with J. N. Ferris, *Journal of nervous and mental Diseases*, 1883.

- 1885 William W. Browning, M. D. Demonstrator of Anatomy  
5 and Lecturer on Anatomy.

B. A. Yale 1873; LL. B. Columbia 1875; M. D. Bellevue Hospital Medical College 1884; Lecturer on Anatomy, Brooklyn Normal School for Physical Culture 1888-; Fellow American Academy of Medicine.

- 1881 George W. Cushing, M. D. Lecturer on Gynecology, 221  
9 Schermerhorn st.

M. D. Long Island College Hospital 1874.

- 1882 Charles E. De La Vergne, M. D. Lecturer on the Principles  
8 of Medicine.

M. D. Long Island College Hospital 1878; Member New York State Medical Society.

- 1885 William M. Hutchinson, M. D. Lecturer on Chemistry and  
5 Instructor in Chemistry and Urine Analysis, 207 Clinton st.

M. D. Long Island College Hospital 1881.

- 1886 Robert L. Dickinson, M. D. Lecturer on Obstetrics and  
4 Instructor in Practical Obstetrics, 145 Clinton st.

M. D. Long Island College Hospital 1882; Assistant obstetrician, Long Island College Hospital; Member New York Academy of Medicine.

- 1889 Gordon R. Hall, M. D. Lecturer on Physical Diagnosis.  
3 B. A. Amherst 1872, M. A. 1878; M. D. College of Physicians and Surgeons 1880.

- 1887 William Browning, M. D. Lecturer on the Anatomy and  
3 Physiology of the Nervous System, 54 Lafayette pl.

Ph. B. Yale 1876; M. D. University of Leipzig 1881; Member Association of American Anatomists, and American Anthropometric Society; Author The veins of the brain, 1884.

- 1889 C. Eugene Gunther, M. D. Lecturer on Materia Medica and  
1 Instructor in Physical Diagnosis, 151 Clinton st.

M. D. Long Island College Hospital 1880; Attending Physician to the chair of diseases of the chest, Long Island College Hospital Dispensary; Visiting physician, Brooklyn Home for Consumptives.

- 1886 William N. Belcher, M. D. Instructor in Histology and  
4 Pathological Anatomy, 25 South Portland av.

M. D. Long Island College Hospital 1884, Ambulance surgeon  
1884-5, House surgeon 1884-5, Physician, out-door department  
1886- ; Physician, Brooklyn City Dispensary, Graham  
Institute and Home for Consumptives; Assistant Pathologist,  
Methodist Episcopal Hospital.

- 1886 William F. Dudley, B. A., M. D. Instructor in Histology  
4 and Pathological Anatomy, and Assistant to the Chair of  
the Diseases of the Throat and Nose, 301 Henry st.

B. A. Brooklyn Collegiate and Polytechnic Institute 1883; M.  
D. Long Island College Hospital 1886; Attending surgeon,  
Department of Laryngology and Rhinology, Long Island  
College Hospital Dispensary; Instructor in diseases of the  
throat and nose, New York Post-Graduate Medical School.

- 1887 Henry H. Morton, M. D. Instructor in Obstetrics.

- 4 M. D. Long Island College Hospital 1882; Attending physician,  
out patient department, chair of skin and genito-  
urinary diseases; Attending physician, Brooklyn City  
Hospital, chair of skin diseases.

- 1889 Edgar A. Day, M. D. Instructor in Practical Obstetrics,  
1 306 Summer av.

#### APPOINTED DURING YEAR

Joshua M. Van Cott, jr, M. D. Adjunct professor of histology  
and pathological anatomy.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

Valedictory, Rush Wilmot Kimball

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Dudley prize medal, James Lefferts Cornell .....	\$36
Dudley memorial prize, Wilbur Lamert Rickard .....	36

#### REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

The collegiate year is divided into two terms — a regular, and a reading and recitation term. The regular term begins in the latter part of September, and continues till the middle of March. The reading and recitation term commences at the close of the regular term, and continues till June.

### Regular term

During this term a systematic course of lectures is delivered by the faculty on the various subjects embraced by their respective professorships, and clinical teaching is carried on for several hours each day in the wards of the hospital and dispensary.

#### CLINICAL MEDICINE

The subject of clinical medicine is made a prominent feature in the system of instruction. The medical wards of the hospital are under the charge of the professors of clinical medicine. The clinical material is so varied and abundant as to include almost every disease which occurs in general practice.

Senior students and physicians accompany the professors to the wards, where the cases are thoroughly studied and investigated. In this way each student has an opportunity to see and examine for himself disease in its various phases. By following the case from the amphitheatre to the bedside, students can witness its whole progress.

Under competent instructors sections of the class are thoroughly drilled in physical diagnosis. The wards of the hospital and dispensary furnish ample material for complete instruction in this branch of medical science.

#### CLINICAL SURGERY

Patients having wounds, fractures and dislocations, admitted to the hospital during the session of the college, are brought into the amphitheatre, examined, commented on, and treated in the presence of the class by the professor of operative and clinical surgery. Subsequently, in the wards of the hospital, these patients are visited by the professor, accompanied by students of the senior class, to whom the changes that have occurred in the cases in the meantime are explained and illustrated. The students are then permitted to investigate and study the cases that are the



subjects of the clinical lectures. In this way they become familiar with the signs, symptoms, diagnosis, prognosis and treatment of a great variety of cases of the surgery of disease and accident.

The practice of antiseptic surgery has for many years been a prominent feature in the clinical instruction of students in this institution. Amputations and all other important operations are performed with strict antiseptic precautions, so that students have ample opportunity for studying the most approved methods employed in antiseptic surgery.

The professor of operative surgery performs the various operations on the cadaver in the presence of the class. Each step of the operation is carefully explained, and the operation is performed and demonstrated in such a manner as to impress it on the mind of the student. Some of the operations are original, and present practical advantages over those described in the standard textbooks. A large number of the operations are duplicated on patients in the presence of the class; while many operations are performed on patients that can not well be demonstrated on the dead body.

#### PRACTICAL OBSTETRICS

Senior students in small sections attend all labors in the lying-in department of the hospital. The phenomena and management of labor are demonstrated, and the students participate in the conduct of the cases, making abdominal and vaginal examinations during their progress. A strict aseptic practice is enforced, each student being trained in the methods of sterilizing hands and instruments, and becoming familiar with the details of antiseptic midwifery. A large number of the class is summoned to obstetric operations conducted under the supervision of the professor of obstetrics.

As many of the confinement cases occur at night, cots have been provided for the members of the class who are in waiting.

In order to increase the facilities for practical teaching, an out-patient obstetric department has been attached to the hospital service. These patients are attended at their homes by the obstetric staff of the hospital, one or more students participating in the conduct of each case. The out-patient department and the hospital clinic afford ample material for practical study of the signs of pregnancy, the phenomena and management of childbed, and for thorough training in the methods of adominal diagnosis.

In addition to this, by the use of the Budin manikin and the fetal cadaver, each student is drilled in the practice of abdominal and vaginal methods of diagnosis, in the use of forceps, in version, in breech extraction and other procedures. This course consists of 25 lectures.

#### GYNECOLOGY

In addition to the course of didactic and clinical lectures in gynecology, the advanced students are present at all the important gynecological operations performed in the hospital, including those upon the cervix and perinæum.

Six students are present at a time, three on each side of the operator, so that they are able to see and understand all the details of his work. All the operations are carefully demonstrated in this way, and each one is repeated before every section of the class.

Furthermore, all senior students attend the clinics of the gynecologists of the dispensary of the hospital, and are thoroughly drilled in the examination and treatment of the ordinary diseases of women. From one to two hours each day during the term are devoted to clinical teaching in this department. The number of patients treated in the hospital is increasing yearly, so that the clinical instruction in this department will be kept up to the high standard already established.

#### CHEMISTRY AND URINE ANALYSIS

The instruction in chemistry is graded as follows :

Two lectures a week on inorganic chemistry are given to the first course students. Second course students, and first course students whose previous training in inorganic chemistry is deemed sufficient, receive instruction in organic and physiological chemistry. The lectures are suitably illustrated by experiments, and prominence is given to the applications of the science to pharmacy, sanitary science, medicine and toxicology.

The instruction in practical chemistry and urine analysis consists of a short course of laboratory instructions in qualitative analysis, or practice in testing the purity of medicinal chemicals, followed by a course in the chemical and microscopical analysis of the urine. The aim is to give the student a thorough drill in the best methods for the detection of normal and abnormal constituents and conditions of this fluid. The student is taught

properly to use all the more important tests, and to apply the knowledge gained in the laboratory to the diagnosis of disease.

In connection with the laboratory practice, a course of lectures on urinary pathology is given by the professor of chemistry, in which the clinical significance and diagnostic bearings of abnormal conditions of the urine are taught. It is expected that every graduate of this institution shall be able to make a complete clinical examination of urine, and to make a correct diagnosis from that examination.

#### HISTOLOGY AND PATHOLOGICAL ANATOMY

Each student is systematically taught the minute structure of normal tissues and organs, and after his course in histology is carefully instructed how to appreciate the changes which take place in these tissues and organs during morbid processes.

This department controls the material of 400 autopsies made annually. In the amphitheatre demonstrations of morbid specimens, with a brief statement of clinical histories, accompany the lectures on pathological anatomy. The students are constantly drilled in the methods of preparing for microscopical examination, and for further investigation, the material which has already been demonstrated to them in the amphitheatre.

The gross and microscopical features of all the varieties of tumors are also studied in the amphitheatre and laboratory.

#### DISEASES OF THE THROAT AND NOSE

Professor French gives a course of weekly clinical lectures and demonstrations. From 20 to 30 minutes of each of the hours are devoted to a lecture on some of the diseases of the throat and nose most frequently met with in practice. The remaining portion of the hour is occupied in demonstrating cases with the laryngoscope and rhinoscope in a room specially arranged for that purpose. Students receive personal instruction in the use of instruments for making examinations of the throat and nose.

#### DISEASES OF THE MIND AND NERVOUS SYSTEM

Professor Shaw gives a course of didactic and clinical lectures on the diseases of the nervous system. The cases furnished by the hospital and dispensary are ample to illustrate almost every known disease of the nervous system. Special attention is given to the study of mental diseases. The course is also illustrated by



microscopic preparations of the pathological histology of the nervous system, and whenever opportunity offers by post-mortem examinations.

#### DISEASES OF THE SKIN

Professor Sherwell gives a systematic course on diseases of the skin, in which he describes the diseases which the general practitioner meets in his daily practice, and their treatment. These didactic lectures are fully illustrated by cases from the hospital and the dispensary, and from Professor Sherwell's skin clinic held at the eye and ear hospital. This clinic is also available to the students of the college. Graduates or students desiring to give special attention to diseases of the skin will here find every facility. No fee is charged for this course.

#### DISEASES OF THE EYE AND EAR

Professors Prout and Mathewson give a course of didactic and clinical lectures on diseases of the eye and ear. Professors Rushmore, Prout and Mathewson are attending surgeons at the Brooklyn Eye and Ear Hospital, at which are annually treated more than 7,000 patients. At the daily clinics which are held, not only do students observe the treatment of the diseases of these organs, but they also witness the operations which are performed, the attending surgeons thoroughly explaining the cases and operations.

#### Reading and recitation term

It is designed to thoroughly prepare the student for attendance on the lectures of the ensuing regular term. Clinical instruction for advanced students is continued during this term.

As the laws of the state of New York require three years' study of medicine, students are advised to commence their study at the beginning of this term, so that the termination of the time required to be spent in the study of medicine will coincide with the time of the annual commencement. Students who do not begin their study until the regular term in September are not permitted to graduate at the annual commencement by reason of their not having studied the full three years, and can not receive their diplomas until the following fall.

The establishment of the reading and recitation term has proved to be advisable in giving thorough and systematic instruction in the elements of medical science. For the junior student just



entering upon his professional studies elementary instruction is provided; while for senior students, advanced studies and ample opportunities for clinical observation are afforded.

### REQUIREMENTS FOR GRADUATION

The legislature of the state of New York in the year 1887 passed an act regulating the practice of medicine in the state. This act provides "that no person shall receive the degree of doctor of medicine, . . . unless after the age of 18 he shall have pursued the study of medical science for at least three years in a chartered medical school, or with some physician or surgeon duly authorized by law to practice physic or surgery, and shall have attended two complete courses of lectures in some legally incorporated medical school or college, in good standing at the time of such attendance, prior to the granting to him . . . of a diploma; . . . provided, further, that two courses of lectures, both of which shall be either begun or completed within the same calendar year, shall not satisfy the above requirement."

A candidate for graduation must fulfill the requirements of the above law, and must present satisfactory testimonials of a good moral character. The last of the two complete courses of lectures required by law must have been in the Long Island College Hospital. He must have pursued the study of practical anatomy to the extent of having dissected each region of the body. He must have taken one practical laboratory course in chemistry and urine analysis. He must have taken one practical laboratory course in normal and pathological histology. He must pass satisfactory examinations in chemistry and urine analysis, histology and pathological anatomy, anatomy, physiology, materia medica and therapeutics, gynecology, obstetrics, surgery, operative and clinical surgery and practice of medicine.

The examinations of other accredited medical colleges in the elementary branches are accepted by the authorities of this college.

The diplomas or tickets of irregular medical schools and the certificates of physicians practicing exclusive systems of medicine will not be received or recognized, nor will time spent in practice prior to graduation be received as an equivalent for any part of a lecture course.

## BUILDINGS

All the buildings used by the college and hospital are owned by the institution. The use of many parts is in common by both branches, and a specification how much of the total value goes to the college and how much to the hospital is impracticable.

## NEW YORK HOMŒOPATHIC MEDICAL COLLEGE

*Eastern Boulevard, New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

- 12 Ap 1860 Legislature incorporated the Homœopathic Medical College of the State of New York in New York city.
- 14 Ap 1869 Legislature changed name to New York Homœopathic Medical College.

## TRUSTEES

Elected

- 1887 President, Hon. Rufus B. Cowing... 178 E. 78 st.
- 1886 Treasurer, Hon. Roswell P. Flower 52 Broadway
- 1871 Secretary, Hon. George W. Clarke.. 352 W. 123 st.
- 1869 Edmund Dwight..... 17 W. 10 st.
- 1869 Hon. H. M. Twombly..... 34 Burling slip
- 1869 Hon. Salem H. Wales..... 25 E. 55 st.
- 1871 Hon. Hiram Calkins ..... 147 W. 49 st.
- 1871 Lewis Hallock, M. D ..... 34 E. 39 st.
- 1873 Hon. E. C. Benedict ..... 29 Broad st.
- 1884 C. B. Foote..... 7 Nassau st.
- 1885 T. F. Allen, M. D., LL. D ..... 10 E. 36 st.
- 1887 Richard M. Hoe ..... 1 E. 69 st.
- 1887 J. Frederick Kernochan..... 63 Wall st.
- 1887 Russell C. Root..... 46 E. 49 st.

## Elected

1887	Giles C. Taintor	11 Wall st.
1887	W. F. Whitehouse	Drexel building
1888	George W. Ely	12 Broad st.
1888	P. de P. Ricketts, M. E., Ph. D	Fourth av. and 49 st.

## APPOINTED DURING YEAR

1890	N. A. Mosman, M. D.	350 Madison av.
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## ADMINISTRATION

Figures in column at left give first year of service in N. Y. Homœopathic Medical College.

1866	Dean and Treasurer of Faculty, T. F. Allen, M. D., LL. D., 10 E. 36 st.
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B. A. Amherst 1858, M. A. 1861, LL. D. 1885; M. D. University of the City of New York 1861, University of the State of New York 1884, Hahnemann Medical College of Philosophy 1870; A. A. Surgeon, U. S. Army 1862-3; Professor of chemistry, New York Medical College and Hospital for Women 1864-5; Professor of anatomy, Homœopathic Medical College 1866-8, Professor of materia medica and therapeutics 1871- , Dean 1881- ; Fellow New York Academy of Science and American Association for the Advancement of Science; Vice-president Torrey Botanical Club; Author Ophthalmic therapeutics, Encyclopedia of pure materia medica, Symptom register of the materia medica, Handbook of materia medica and homœopathic therapeutics, a new edition of Bonninghausen Therapeutic pocket book, The characeae of America, Characeae Americanae exsiccatae.

Treasurer, Hon. Roswell P. Flower, 52 Broadway  
Secretary of Faculty, L. L. Danforth, M. D., 149 W. 44 st.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. Homœopathic Medical College and years spent in teaching.

1886	T. F. Allen, M. D., LL. D. Dean and Professor of Materia Medica and Therapeutics, 10 E. 36 st.
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See also "Administration."

J. W. Dowling, M. D. Professor of Physical Diagnosis, Diseases of the Heart and Lungs, and Clinical Medicine, 6 E. 43 st.

St Clair Smith, M. D. Professor of Theory and Practice of Medicine, 8 W. 38 st.

- 1876 Martin Deschere, M. D. Professor of Diseases of Children,  
15 334 W. 58 st.

M. D. New York Homœopathic Medical College 1875; Assistant demonstrator of anatomy 1876-7, Lecturer on microscopy and histology 1878-81; Visiting physician, Laura Franklin Free Hospital for Children; Director, children's department, New York Homœopathic Medical College Dispensary; Member American Institute of Homœopathy and New York State Homœopathic Medical Society.

- 1886 Selden H. Talcott, M. D. Professor of Mental and Nervous diseases, Middletown.

B. A. Hamilton 1869; M. D. New York Homœopathic Medical College 1872, University of the State of New York 1888; M. A. Hamilton 1872, Ph. D. 1882; President New York State Homœopathic Society and American Institute of Homœopathy; Honorary member Massachusetts State Homœopathic Medical Society; Associate member American Association of Medical Superintendents, Society of Mental Medicine of Belgium; Author of numerous essays.

- 1874 Joseph T. O'Connor, M. D., Ph. D. Clinical Professor of  
11 Nervous Diseases, 19 W. 46 st.

M. D. Georgetown University Medical Department 1867; Ph. D. College of St Francis Xavier 1876; Professor of chemistry and toxicology, New York Homœopathic Medical College 1874-81; Professor of materia medica, New York Medical College and Hospital for Women 1879-80; Professor of mental and nervous diseases, New York Medical College and Hospital for Women 1886-.

- 1884 George M. Dillow, M. D. Professor of Diseases of the Kid-  
22 neys, 102 W. 43 st.

B. A. Hamilton 1868, M. A. 1885; M. D. College of Physicians and Surgeons 1875; Professor of chemistry and toxicology, New York Medical College and Hospital for Women 1879-84; Surgeon, New York Ophthalmic Hospital 1886; President Homœopathic Medical Society State of New York; Member American Institute of Homœopathy; Honorary member Connecticut State Homœopathic Medical Society; Assistant editor *Medicochirurgical quarterly*, 1880-2; Editor-in-chief *North American journal of homœopathy*.

- A. W. Palmer, M. D. Clinical Assistant to the Chair of Diseases of Children.

M. D. New York Homœopathic Medical College; Lecturer and assistant surgeon, Throat department New York Ophthalmic Hospital 1888-; Member New York Society for Medical Scientific Investigation, Homœopathic Medical Society of State of New York, American Institute of Homœopathy.



E. W. Hitchcock, M. D. Clinical Assistant to the Chair of Diseases of Children, 265 W. 127 st.

1856 William Tod Helmuth, M. D., LL. D. Professor of Surgery,  
35 299 Madison av.

M. D. Homœopathic Medical College of Pennsylvania 1853, Hahnemann Medical College, San Francisco 1886, University of the State of New York 1887; Surgeon, Good Samaritan Hospital, St Louis 1863-70, Homœopathic Hospital, Ward's Island 1870-88, Hahnemann Hospital, New York 1871- ; Consulting Surgeon, New York Medical College and Hospital for Women 1873-90, Laura Franklin Free Hospital for children, New York Homœopathic Medical College Dispensary; Surgeon and superintendent, Flower Hospital; Professor of anatomy, Homœopathic Medical College of Pennsylvania 1856-8, Homœopathic Medical College of Missouri 1860-5; Professor of theory and practice of medicine, Homœopathic Medical College of Missouri 1866; Professor of surgery, St Louis College of Homœopathic Physicians and Surgeons 1869; President New York State Homœopathic Medical Society 1888; Honorary member Société Medicale Homœopatheque de France 1879, Homœopathic Medical Society of Massachusetts, Connecticut Medical Society, Homœopathic Society of Rhode Island 1881; Member American Institute of Homœopathy 1853, President 1868; Editor Western journal of homœopathy, 1864-71; Co-editor New England medical gazette, 1871-3, New York journal of homœopathy, 1873-5, Homœopathic times, 1875; Author Helmuth's surgery, 1855, Treatise on diphtheria, 1862, System of surgery, three editions, 1873, '79, '86, Supra-pubic-lithotomy, 1882, Eight remarkable cases in surgery, 1865, Ten cases in surgery, 1870, Essay on cleft palate, 1866, Epi-Cystotomy, 1879, Nerve stretching with a short history of the operation, 1879, Treatise on ovariectomy, 1886, A dozen cases of clinical surgery, 1876, Two rare cases of exstrophy of the bladder, 1884, Contribution to gynecological surgery, 1884, Series of 35 laparotomies, 1886, Fourteen consecutive completed ovariectomies, 1884, Arts in St Louis, 1863, Scratches of a surgeon, 1879, Steamer book, 1880, Poem for annual meeting of the New York State Society, 1882, Alumni poem, class '53, 1886, Humanity, A vision and reality, 1887.

Francis E. Doughty, M. D. Professor of Genito-urinary Surgery, 512 Madison av.

- 1881 Sidney F. Wilcox, M. D. Lecturer on the Principles of  
10 Surgery and Orthopedic Surgery and Operative Surgery,  
The Rutland, Broadway and 57 st.

M. D. New York Homœopathic Medical College 1880; Surgeon,  
Laura Franklin Free Hospital for Children, Flower Hospital;  
Member New York State Homœopathic Medical Society,  
American Institute of Homœopathy; Editor Surgical  
department North American journal of homœopathy.

- C. W. Cornell, M. D. Lecturer on Minor Surgery, 343 W.  
29 st.

- 1890 William T. Helmuth, jr, M. D. Clinical Assistant to the  
2 Chair of Surgery, 180 W. 59 st.

M. D. New York Homœopathic Medical College 1887; Surgeon,  
Laura Franklin Hospital for Children; Clinical Assistant to  
the chair of surgery, Flower Hospital; House surgeon, Hel-  
muth House; Member New York State Medical Society,  
American Institute of Homœopathy, New York Society  
of Medical and Scientific Investigation; Member of  
International medical congress of Berlin 1890.

- J. L. Beyea, M. D. Clinical Assistant to the Chair of  
Genito-urinary Diseases and Demonstrations of Midwifery,  
216 E. 14 st.

- L. L. Danforth, M. D. Professor of Obstetrics, 149 W. 44 st.

- 1890 F. W. Hamlin, M. D. Assistant to the Chair of Obstetrics,  
5 149 W. 44 st.

B. A. Amherst.

- W. O. McDonald, M. D. Professor of Gynecology, 117  
W. 44 st.

- R. E. McDonald, M. D. Clinical Assistant to the Chair of  
Gynecology.

- 1881 C. S. Macy, M. D. Clinical Assistant to the Chair of  
10 Gynecology, 117 W. 12 st.

- S. H. Smyth, M. D. Clinical Assistant to the Chair of  
Gynecology.

- W. W. Blackman, M. D. Professor of Anatomy, 372  
Adelphi st., Brooklyn.

- Chauncey E. Low, M. D. Lecturer on Anatomy, 110  
Remsen st., Brooklyn.

H. B. Minton, M. D. Demonstrator of Anatomy, 165  
Joralemon st., Brooklyn.

1883 Charles McDowell, M. D. Professor of Physiology, 116  
8 W. 13 st.

M. D. New York Homœopathic Medical College 1878; Member  
American Institute of Homœopathy, Homœopathic Medical  
Society of the State of New York.

Malcolm Leal, M. D. Professor of Chemistry, Toxicology  
and Hygiene, 158 W. 48 st.

Surgeon, New York Ophthalmic Hospital; Member Homœo-  
pathic Medical Society of the State of New York, American  
Institute of Homœopathy, American Chemical Society;  
Associate editor North American journal of homœopathy,  
Journal of ophthalmology, otology and laryngology.

1886 Eugene H. Porter, M. A., M. D. Professor of Medical  
4 Chemistry, 181 W. 73 st.

M. D. New York Homœopathic Medical College 1885; M. A.  
Rutgers 1889; Editor North American journal of  
homœopathy.

1883 G. G. Shelton, M. D. Professor of Materia Medica, 251  
8 Madison av.

Member American Institute of Homœopathy, New York State  
Medical Society.

1890 W. S. Pearsall, M. D. Laboratory Instructor.

J. W. Dowling, jr, M. D. Professor of Histology and Micro-  
scopy and Clinical Assistant to the Chair of Physical  
Diagnosis and Clinical Medicine, 614 Lexington av.

1884 W. Storm White, B. S., M. D. Professor of General Pathol-  
9 ogy and Morbid Anatomy, and Demonstrator of Urinary  
Sediments, 353 Fifth av.

B. S. College of the City of New York 1877; M. D. New York  
Homœopathic Medical College 1879; Professor of histology  
and pathological anatomy, New York Homœopathic Medical  
College and Hospital for Women 1882-; Pathologist and  
curator, Ward's Island Homœopathic Hospital 1882-;  
Pathologist, Hahnemann Hospital 1890-.

1870 R. H. Lyon. Professor of Medical Jurisprudence, 170  
Broadway.

LL. B. Harvard Law School 1862; M. A. Madison University  
• 1865; Member of the bar of the supreme court of the U. S.

1872 P. E. Arcularius, M. D. Professor of Dermatology, 57 E. 19 21 st.

B. A. Williams 1864, M. A. 1867; M. D. College of Physicians and Surgeons 1867; Professor of physiology, New York Medical College for Women 1875-6; Physician, New York Homœopathic Dispensary, Diseases of the skin 1868-73; Member American Institute of Homœopathy.

George S. Norton, M. D. Professor of Ophthalmology, 154 W. 34 st.

Henry C. Houghton, M. D. Professor of Otology, 12 W. 39 st.

Clarence E. Beebe, M. A., M. D. Professor of Laryngology and Rhinology, 44 W. 38 st.

B. A. Yale 1871, M. A. 1874; M. D. University of the City of New York 1873; Professor of laryngology and rhinology, New York Ophthalmic Hospital and College; Surgeon, New York Ophthalmic Hospital; Surgeon, New York Homœopathic Medical College Hospital; Throat surgeon, New York Homœopathic Medical College Dispensary; Member New York State Homœopathic Medical Society; American Institute of Homœopathy, New York Society for Medico-scientific Investigation.

#### VACANCIES

E. V. Moffat, M. D. Professor of Materia Medica. Resigned 1 My 1890.

#### APPOINTED DURING YEAR

F. W. Hamlin, M. D. Assistant to the chair of obstetrics, My 1890.

W. S. Pearsall, M. D. Laboratory instructor.

E. W. Hitchcock, M. D. Clinical Assistant to the diseases of children, My 1890.

#### PROMOTIONS

##### In title alone

G. G. Shelton, M. D. Professor of pharmaceutics and toxicology and lecturer on materia medica, from lecturer on pharmaceutics and toxicology.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

Valedictory, Max M. Smith, M. D. . . . . Schenectady



## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
First faculty prize, for highest average in final examination (microscope with accessories), George Forest Martin, M. D., Cambridge, Mass. ....	\$100
Second faculty prize, for second highest average in final examination (microscope), Charles Brook Flint, M. D., Black River. ....	50
Wales prize, for highest average in junior examination (Helmuth pocket case of instruments), Magnus T. Hopper, Mayville, Ky. ....	25
Special prize (Helmuth pocket case), Bruno Bierbauer, M. D., Mankato, Minn. ....	25

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The graded course of three years is obligatory. The curriculum is divided according to the following scheme, and students are expected to conform to this in pursuing their studies.

The first year embraces chemistry, and the sub-divisions of this chair, viz., medical chemistry and hygiene; microscopical histology, and the study of urinary sediments under the microscope; physiology; histology; the junior anatomical course, which includes the study of the bones, muscles and ligaments.

Junior students are not expected to perform dissections.

A freshman desiring to complete anatomy the first year, can do so by passing on bones, muscles and ligaments on entering, and then dissecting during first year.

An examination on all the above subjects will be held at the end of the first year.

Students who fail in one or more of the above studies have the privilege of coming up a second time at the examinations held in October; thus an opportunity is afforded delinquent students to make up deficiencies and continue with their class in second year work.

The second year includes: toxicology and pharmaceutics; pathology; anatomy and dissections; medical jurisprudence;

principles of surgery and minor surgery ; anatomy, physiology and embryology of obstetrics, and the mechanism of normal labor ; general principles of physical diagnosis ; lectures on *materia medica* with quiz.

At the close of the second year, final examinations are held on all studies, except *materia medica*. The examination on anatomy includes the entire subject, reviewing the work of the preceding year.

The studies of the senior class embrace : surgery ; practice of medicine ; obstetrics ; *materia medica* ; gynecology ; all specialties and clinics.

### *First year*

*Chemistry* — Chemistry is taught in the first year by means of lectures, covering about the ground of the usual sophomore course in literary colleges. The laboratory work is an important feature of the course, especial prominence being given to urinary analysis ; lectures on that subject are given in connection with the practical work. The course on toxicology during the second term under Dr Shelton is in the main didactic, but the student is taught in the first year to make the tests for those poisons most frequently encountered in practice.

The laboratory scheme includes besides urinary analysis and the more important toxicological tests, a partial course in both water and milk analysis, so that each student on finishing his laboratory course will be able to make a thorough and satisfactory analysis of any sample of urine submitted to him, as well as to state its clinical significance ; to detect in potable water any decomposing organic matter rendering it unwholesome ; and to determine the degree of richness and purity of any sample of milk submitted to him. If the student desires, facilities will be given for a more complete course in any of these branches.

*Hygiene* — The chair of hygiene and sanitary science is associated with that of chemistry. The lectures are confined mainly to the subject of practical hygiene in relation to the prevention of disease.

*Microscopical histology and study of urinary sediments under the microscope ; laboratory work* — The chemical and microscopical laboratories are both open every afternoon except Saturday. The class is divided into sections, which are drilled thoroughly in making the various analyses of urine, as well as

toxicological, water and milk tests. The microscopical laboratory is also open all the afternoon on five days in the week. In histology and general microscopy the class will be formed into sections and thoroughly drilled in practical working with the microscope, preserving, staining, cutting, mounting the specimens and manipulating the instruments. At the end of the course each student will be proficient in diagnosing at sight most of the tissues and organs under the microscope.

At the same time the professor forms and drills classes in the microscopical study of urinary sediments. Here the students learn to recognize casts, the various epithelia, pus, the varied crystalline sediments from normal and morbid urine, all from fresh specimens, sent by the profession to the college for examination. The classes are small (six or seven men), thus insuring ample personal attention to each student by the professor.

The microscopical course is so arranged that each student spends in the laboratory 60 hours, or the equivalent of a month's drill of two hours daily, while the chemical laboratory gives a month as well. These courses are obligatory for juniors, and at the end of the term practical examinations are held in each, covering the work accomplished during the course.

*Physiology* — Three lectures are given each week. The endeavor is to give the student a thorough understanding of the essentials in each division of physiological study, especially in those particulars which will assist him in the understanding and management of disease. The lectures will be illustrated by experiments on animals, and the work gone over will be freshened by frequent quizzes.

*Histology* — This subject is taught in a course of lectures and includes not only the structure of tissues in general, but the minute anatomy of every portion of the body.

*Anatomy* — The junior anatomical course prepares the student for the more advanced teaching in this branch, to be taken up during the middle year.

### *Second year*

*Toxicology and pharmaceutics* — Dr Shelton during the first half of the term delivers a course of lectures to the middle class on toxicology. The practical laboratory work in testing for poisons, etc. is included in the chemical course of the first year.



In the latter half of the term Dr Shelton delivers a course of lectures on pharmaceutics. In this are described the methods and materials used in preparing the homeopathic remedies, directions and drill in prescription writing, and a brief formulary comprising prescriptions for a few standard emetics, laxatives, stimulants, enemata, etc., such as may be useful in emergencies and with which every physician should be familiar.

*Pathology* — Professor W. Storm White gives a thorough course of lectures, illustrated by fresh specimens in abundance and demonstrations from his collection of microscopic mountings.

Professor White being pathologist to the Ward's Island Hospital, has an abundant supply of material from which to draw. The lectures in this department will hereafter be confined to general pathology, and will be completed in a single course. Special pathology (such as pathology of tumors, the kidney, digestive tract and liver) is described by the professors of the different branches under which these subjects would naturally come.

*Anatomy* — Professor Blackman delivers the anatomical lectures of the second year, which include angiology, neurology, splanchnology, topographical and surgical anatomy.

The demonstrator of anatomy attends from two to four hours every day, makes demonstrations in the dissecting-room, and superintends the work of every student who must dissect at least three parts and stand a thorough quiz on each before passing on to the next. The demonstrator will, as often as necessary, make demonstrations of the viscera before the whole class.

*Medical jurisprudence* — This is taught by Professor Lyon.

The remaining studies of the middle year are preparatory to the more advanced studies of the senior year.

The senior branches will hereafter be so divided that the second year students will be required to attend lectures on surgery, obstetrics, physical diagnosis and materia medica. Thus the foundation will be laid for a better appreciation of the work of the senior year, and at the same time the senior class will be relieved somewhat of the very arduous duties which have heretofore been laid upon them in the attempt to crowd all the work of the third year into a single course of lectures.

In accordance with this plan Dr Wilcox will deliver one lecture a week on the principles of surgery, while Dr Cornell will lecture on minor surgery.



Professor Dowling or Professor J. W. Dowling, jr, will deliver a few lectures to the middle class on the general principles of physical diagnosis. With this preparation, these men, as seniors, will be better able to recognize and interpret the signs of disease brought out in the thorough physical examination of patients in the presence of the class.

Professor Danforth will lecture to the middle class twice a week until the Christmas holidays on the anatomy, physiology and embryology of the subject of obstetrics. The middle class will be expected to attend lectures on materia medica and will be quizzed throughout the term, but not finally examined till the completion of the senior year.

### *Third year*

The final session is devoted as far as possible to practical work. Each professor is expected to give as far as practical, clinical instruction in connection with his lectures, drawing his material from the dispensary connected with the college.

The following clinics are held before the class: therapeutics, dermatology, physical diagnosis, surgery, ophthalmology, heart and lungs, otology, nervous diseases, genito-urinary, general medicine, out-door children's department, out-door obstetric department.

*Materia medica and therapeutics* — A course of about six lectures on therapeutics is given by Professor Allen at the beginning of the session. Through the term at intervals, as may seem best, he will introduce patients whose cases illustrate the application of the homeopathic remedy. There are four lectures a week throughout the course. The drugs lectured on are grouped according to their physiological action, bearing in mind at the same time their clinical applications.

*Theory and practice of medicine* — It is our aim to give a thorough and practical course of lectures in this department, covering all the diseases which the general practitioner may be called upon to treat. In order the better to accomplish this result in the short space of time required by our present laws, in a department so immensely extended as the theory and practice of medicine now is, it has been deemed advisable to divide this branch into sections, each section being in charge of its appro-

priate professor through the whole course of instruction, but all uniting in the final examination as one chair. This division of labor is arranged as follows :

1—*Practice of medicine*; Professor Smith lectures on fevers, general and constitutional diseases and diseases of the digestive organs. So far as is practicable, clinical as well as didactic instruction is given, and especial attention is paid to seeing that the students are well grounded in the diagnosis of each disease. In discussing the treatment, proper attention is given to the preventive, hygienic and accessory measures with which every physician should be familiar.

2—*Physical diagnosis, diseases of the heart and lungs and clinical medicine*; In this important department the instruction is mainly clinical, the dispensary connected with the college affording ample material for demonstrating the physical signs of disease.

For a number of years past Professor Dowling has devoted a portion of nearly every lecture hour to the thorough physical examination of some interesting case of disease, not confining himself specially to the diseases of the heart and lungs. These patients are not seen by the professor till they are brought before the class, when they are examined precisely as if they were private patients at his own office and with the same thoroughness; in addition to these clinical lectures, opportunities will be given to the members of the graduating class for the personal examination of patients under the direct supervision of the professor or his assistants.

3—*Mental and nervous diseases*; The subject of mental diseases, their history, nature, causes, courses and forms, is discussed by Professor Selden H. Talcott, medical superintendent of the New York State Homeopathic Asylum at Middletown, N. Y.

The clinical professor of nervous diseases demonstrates to the senior class weekly during the term cases of all the more frequent forms of nervous disease, as well as many of the rarer ones. The tests and methods of examination employed in diagnosis are those which utilize the most recent advances in neurology. The use of electricity as a means of treatment and of diagnosis is practically shown.

4—*Diseases of children* are taught by Professor Deschere in a course of lectures covering the etiology, pathology and morbid

anatomy of this subject; particular stress is laid on the homeopathic treatment of children's diseases.

Every student gets, during the course, from six to 12 cases of a variety of severe forms of children's diseases including, for instance, the eruptive fevers, disease of the respiratory organs, diphtheria, etc., which would not bear the out-door exposure necessary in reaching the clinic.

5—*Diseases of the kidneys*; In addition to diseases of the kidney proper, this course includes the two forms of diabetes and the interpretation of morbid urine in general. The lectures delivered by Professor Dillow are wholly didactic, and, in connection with chemical and microscopical work in the laboratory, will teach by ample illustration the essentials of pathology, diagnosis and treatment in these important branches of practical medicine.

*Gynecology* — The features of this course consist in a carefully condensed series of lectures, in the opportunity given to each student to make examinations in the dispensary, to observe the use of instruments, and besides this, the class is taken in sections to assist in the performance of gynecological operations.

*Obstetrics* — The course consists of three lectures each week. Until the Christmas holidays, two of these lectures each week will be especially for the middle class, and will cover the elementary portion of the subject, viz.: the anatomy of the female pelvis and internal generative organs with especial reference to their obstetrical functions, the physiology of menstruation and ovulation, and the development of the fetus. The mechanism of normal labor will also be included in this course. The third lecture each week until the holidays, and all the remaining lectures of the course will be devoted to the seniors and will include the diseases of gestation and pregnancy, normal and abnormal labor, and all instrumental procedures connected with delivery. The aim will be to cover the entire field of practical obstetrics. In the demonstrations before the class an infant cadaver is employed to illustrate the different attitudes and presentations of the child, within the body of a manikin, which resembles very closely that of a woman from the body to the knees. Besides this, Professor Danforth will divide the class into sections and give an opportunity, privately, for each student to diagnosticate the different positions of the dead child, in the body



of a female cadaver, as well as to apply forceps, perform version and other obstetrical manipulations. The out-obstetrical department is conducted by the demonstrator of midwifery. Patients about to be confined are assigned to members of the graduating class, and attendance is given under the immediate direction of the demonstrator.

*Surgery*—The teachings of the chair of surgery will be materially altered during the ensuing session. Professor Helmuth will give exclusive attention to the surgical diseases of special regions and tissues of the body, exemplified by clinics in the amphitheater of the hospital and at Helmuth house. Dr Wilcox, in addition to his lectures on orthopedic surgery as illustrated at the Laura Franklin Free Hospital, will give a complete course on the principles of surgery with demonstrations on the cadaver. Dr Cornell will lecture on minor surgery including a special course on fractures and dislocations. The examinations on these branches will also be carefully and critically conducted. By this division of labor students of the middle class will be enabled to acquire accurate knowledge on certain branches which will the better prepare them for the lectures of the senior year, while the graduating class will receive a complete course on practical surgery, hitherto unobtainable from want of time.

*Ophthalmology*—The instruction in this department is thoroughly practical. Those diseases of the eye commonly met with in general practice and which the physician must be able to recognize and properly treat are chiefly considered. The characteristic symptoms of each disease, the differential points in diagnosis, the causes, course, prognosis and treatment will be clearly presented. In addition to which each lecture is illustrated by cases. Thus the student is made familiar with the different forms of the various diseases of the eye and their correct method of treatment.

Besides the diseases, special attention and instruction is given to accidents and injuries of the eye and its appendages, in which often the first step in the treatment decides whether the eye will be saved by the knowledge of the physician or permanently lost through his ignorance.

*Clinical otology*—Professor Houghton embraces in his course of lectures those diseases of the internal, middle and external ear liable to be met with by the general practitioner. Each student is taught to make a thorough examination and to apply necessary



treatment, using the instruments himself whenever practical. Clinical otology occupies the hour during the first and laryngology the latter half of the term.

*Dermatology* — This subject is taught in a system of lectures, consisting of regular didactic instruction, coupled with practical illustration by means of patients from the college dispensary, who will appear and reappear for diagnosis and treatment. In this way many cases of skin diseases are viewed by the class during the session; the whole scheme of instruction being to convey a practical knowledge of dermatology, especially as regards the more common diseases of the skin.

*Genito-urinary diseases* — The instruction in this department consists in didactic lectures, on venereal and genito-urinary diseases, illustrated by an abundance of clinical material. Many cases are treated and operations performed before the class. The course of instruction extends over two years, the first session embracing chiefly venereal diseases, while during the second, more prominence is given to genito-urinary troubles. The clinical assistant will form small classes and take the students to the dispensary, where they will be taught in the practical part of the work, such as the passage of sounds, use of the catheter, etc.

*Laryngology and rhinology* — It is the design of this department to place before the students as thorough a course of instruction as is possible in rhinoscopy, pharyngoscopy and laryngoscopy, the anatomy, physiology and diseases of the nose, pharynx and larynx.

The number of lectures is necessarily restricted, and hence the topics under consideration are studied in a manner calculated to render them of practical service, especially to the general practitioner. Demonstrations will be given in the lecture-room, and also the throat department of the college dispensary.

Clinical otology will occupy the hour during the first, and laryngology the latter half of the term.

## REQUIREMENTS FOR GRADUATION

1 — Candidates for the degree of doctor of medicine must be 21 years of age, of good moral character, and have studied medicine under the direction of a qualified physician of regular standing for the full period of three years. Certificates attesting these facts must be furnished.

2—They must have attended three full courses of didactic lectures, the last of which must be at this college.

Students from other colleges must present certificates of attendance on two courses of lectures; or certificates showing proficiency in all branches of the curriculum of this college, for the junior and middle years, before they can enter the senior class and become eligible for the degree of doctor of medicine.

3—They must have pursued the study of practical anatomy during one regular session of this school, or one regular session at some other school in good standing.

4—They must sustain such an examination in each department of the course as shall be satisfactory to the faculty and censors.

The attention of students is directed to the fact that attendance on three courses of lectures does not constitute three years of study. The six months preceding the attendance on the first course of lectures should be spent in preparatory study, and students are requested to register with a preceptor at the commencement of this period, in order to be able to furnish the necessary certificate as to the time spent in medical study, and to fulfil the requirements of the laws of the state of New York, relating to this subject. Furthermore, the three years of medical study required by law must be exclusive of any time spent as an undergraduate at a non-medical institution; but the two years' course styled "preparatory to the study of medicine" at the Cornell University, the Sheffield Scientific school of Yale, or the Johns Hopkins University is accepted in place of six months' study with a preceptor, in the case of a student who afterwards attends three sessions at this school.

## BUILDINGS

Main building, four story brick, built 1889, three class rooms, 600 seats, value \$160,000.

# BELLEVUE HOSPITAL MEDICAL COLLEGE OF THE CITY OF NEW YORK.

*Foot of E. 26 st., New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

- 19 N 1847 Medical board of alms-house hospital organized.  
1849 Amphitheatre built. Clinical lectures begun.
- 25 O 1857 Building for prosecution of pathological studies inaugurated. Instruction given three or four years in winter months, without its being yet regarded as distinct medical college.
- 17 Ap 1860 Act passed by which care of hospital passed from board of governors of former alms-house department to Department of Public Charities and Correction.
- 1 Mr 1861 Committee appointed to procure plans for college building. Medical faculty organized soon after.
- 3 Ap " College incorporated by special act, under name of Bellevue Hospital Medical College of the City of New York, of the State of New York.
- 1867 Summer course of lectures and recitations commenced and with this lecture course, recitations became from year to year more prominently associated until 1871, when they superseded entirely the systematic lectures.

## TRUSTEES

President, D. O. Mills  
Treasurer, Robert S. Hone  
Secretary, James Thomson  
Charles B. Alexander  
William H. Appleton

Edgar S. Auchincloss  
 Hon. Isaac Bell  
 Hon. Thomas S. Brennan  
 Andrew Carnegie  
 Most Rev. Archbishop Corrigan  
 William Butler Duncan  
 Hon. Jacob Hess  
 Hon. William Walter Phelps  
 Hon. Henry H. Porter  
 Percy R. Pyne  
 Roswell G. Rolston  
 Thomas Rutter  
 W. D. Searles  
 Samuel Sloan  
 John Steward  
 Rev. Roderick Terry, D. D.

APPOINTED DURING YEAR

Charles B. Alexander

VACANCIES

Charles E. Simmons, 8 Mr 1890  
 John J. Astor

ADMINISTRATION

Figures in column at left give first year of service in Bellevue Hospital Medical College.

1872 President, William T. Lusk, M. D., 47 E. 34 st.

M. A. Yale; Professor of physiology, Long Island College Hospital 1868-72; Lecturer on physiology, Harvard Medical College 1870-2; Honorary Fellow Edinburgh Obstetrical Society 1890; Corresponding Fellow London Obstetrical Society 1876; Corresponding Member Paris Société Obstétricole et Gynécologique, Paris Academy of Medicine; Author Science and art of midwifery.

Treasurer, Robert S. Hone.

1861 Secretary, Austin Flint, M. D., LL. D., 14 W. 33 st.

M. D. Jefferson Medical College 1857, LL. D. 1885; Professor of physiology, Medical Department, University of Buffalo 1858-9; Professor of physiology, New York Medical College



1859-60; Professor of physiology, New Orleans School of Medicine 1860-1; Professor of physiology, Long Island College Hospital 1862-8; Surgeon, Buffalo General Hospital 1858-9; Surgeon, M. L. [Ladies' Home] General Hospital 1862-6; Visiting physician, Bellevue Hospital 1869-74, 1877 —, Member American Philosophical Society; Fellow New York State Medical Association; Author Physiology of man, 1866, Manual of chemical examination of the urine, 1870, Physiological effects of liver and protracted muscular exercise, 1871, Text-book of human physiology, 1875, Richerdus Experimentales sur une nouvelle fonction du foie, 1868, Source of muscular power, 1878; Editor Buffalo Medical Journal 1857-60.

## INSTRUCTION

Figures in column at left give first year of service in Bellevue Hospital Medical College and years spent in teaching.

1872 William T. Lusk, M. D. President and Professor of Obstetrics and Diseases of Women and Children and Clinical Midwifery, 47 E. 34 st.

See also "Administration."

1861 Austin Flint, M. D., LL. D. Professor of Physiology and Physiological Anatomy, 14 W. 33 st.

See also "Administration."

Fordyce Barker, M. D., LL. D. Professor of Clinical Midwifery and Diseases of Women.

Benjamin W. McCreedy, M. D. Emeritus Professor of Materia Medica and Therapeutics.

Edward G. Janeway, M. D. Professor of the Principles and Practice of Medicine and Clinical Medicine and Director of Carnegie Laboratories.

1877 Frederic S. Dennis, M. D. Professor of the Principles and Practice of Surgery and Clinical Surgery and Director of Carnegie Laboratories, 542 Madison av.

B. A. Yale 1872; M. D. Bellevue Medical College 1874, Royal College of Surgeons 1877; Visiting surgeon, Bellevue, Harlem and St Vincent Hospitals; Consulting surgeon, Montefiore Home; Member American Surgical Association, Clinical Society of London, German Congress of Surgeons; Author Supra-Pubic cystotomy, Laparotomy in gunshot wounds, Laparotomy gluteal aneurisms, Treatment fracture patella by metallic suture, Osteotomy for cure of rachitic deformities.

- 1861 Lewis A. Sayre, M. D. Professor of Orthopedic Surgery and  
30 Clinical Surgery, 285 Fifth av.

B. A. Transylvanie University (Ky.) 1839; M. D. College of Physicians and Surgeons 1842; Attending surgeon, Bellevue Hospital 1853-80, Consulting surgeon 1880-; Attending surgeon, Charity Hospital 1859-73, Consulting surgeon 1873-; Consulting surgeon, Home for Incurables, St Elizabeth's Hospital; Resident physician, City of New York 1866-; Member Medical Society State of New York, New York State Medical Association, American Medical Association, American Surgical Association, American Orthopedic Association; Honorary member New Brunswick Medical Society, Medical Society of Norway, Edinburgh Medico-Chirurgical Society, British Medical Association, St Petersburg Medical Society; Knight of the Order of the Wase; Author Practical manual of the treatment of club foot, 1862, Lectures on orthopedic surgery and diseases of the joints, 1876, Spinal diseases and spinal curvature, 1877.

A. A. Smith, M. D. Professor of Materia Medica, Therapeutics and Clinical Medicine.

Joseph D. Bryant, M. D. Professor of Anatomy and Clinical Surgery and Associate Professor of Orthopedic Surgery and Examiner in the College Recitation Class.

R. Ogden Doremus, M. D., LL. D. Professor of Chemistry, Toxicology and Medical Jurisprudence.

- 1866 Henry D. Noyes, M. D. Professor of Ophthalmology and  
30 Otology.

B. A. University of the City of New York 1851, M. A. 1854; M. D. College of Physicians and Surgeons 1855; Surgeon, New York Eye and Ear Infirmary 1865-; President American Ophthalmological Society 1880-5; Author Treatise on diseases of the eye, Text-book on diseases of the eye.

- 1875 J. Lewis Smith, M. D. Clinical Professor of Diseases of  
Children, 64 W. 56 st.

M. D. College of Physicians and Surgeons 1853; Interne, Buffalo Hospital of the Sisters of Charity 1852; Author Treatise on diseases of children.

Beverley Robinson, M. D. Clinical Professor of Medicine.  
Francke H. Bosworth, M. D. Professor of Diseases of the Throat.

Samuel Alexander, M. D. Professor of Genito-Urinary Surgery, Syphilology and Dermatology.

- 1889 Carlos F. MacDonald, M. D. Professor of Mental Diseases,  
3 334 Fifth av.

M. D. Bellevue Hospital Medical College 1869; Medical superintendent, Kings County Asylum and Binghamton and Auburn State Asylums for the Insane; President State commission in lunacy; Member New York State Medical Society, American Association of Superintendents of American Institutions for the Insane; Author Statutes governing the state asylum at Auburn, and of all legislation and plans for the new state asylum at Matteawan, The early diagnosis of insanity, 1877, Report on chloral hydrate, 1878, Feigned insanity, 1879, Feigned epilepsy, 1880, Homicide, suicide, 1879, Trephining for traumatic epilepsy, 1883, Homicide, plea of insanity, 1878, Haematoma auris (insane ear), 1886, Gun shot injury of the head, 1886.

Charles A. Doremus, M. D., Ph. D. Professor Adjunct to the Chair of Chemistry, Toxicology, and Medical Jurisprudence and Examiner in the College Recitation Class.

Le Roy M. Yale, M. D. Lecturer Adjunct on Diseases of Children.

Thomas H. Burchard, M. D. Lecturer on Surgical Emergencies.

- 1890 John E. Weeks, M. D. Lecturer on Ophthalmology and Otology.

M. D. Medical and Surgical Department, University of Michigan; Interne, Work-house and Alms-house Hospitals 1882-3, Emigrants Hospital 1883-5, New York Ophthalmic and Aural Institute 1885-7; Assistant to chair of ophthalmology, Medical Department University of the City of New York 1885-7; Chief of Clinic, Eye department, Vanderbilt Clinic, and first assistant to chair of ophthalmology 1888-90; Instructor in bacteriology, New York Post-Graduate Medical School 1887-8; Surgeon, New York Eye and Ear Infirmary 1890-; Visiting oculist, Alms-house and Work-house Hospitals 1886-; Visiting oculist, Hebrew Guardian Sheltering Society 1887- . . .

- 1885 Herman M. Biggs, M. D. Demonstrator of Anatomy,  
6 Instructor in the Carnegie Laboratories and Examiner in College Recitation Class.

B. A. Cornell 1882; M. D. Bellevue Hospital Medical College 1883; Pathologist, Charity Hospital, New York City Health Department; Acting pathologist, Bellevue Hospital; Visiting physician, Gouverneur Hospital; Consulting physician, North Brothers' Island Hospitals for Contagious Diseases; Member American Medical Association, New York State Medical Association, American Society of Anatomists.



H. M. Silver, M. D. Assistant Demonstrator of Anatomy.

1883 Morton Grinnell, M. D. Assistant Demonstrator of Anatomy  
8 and Assistant to the Chair of Surgery, 48 E. 26 st.

B. A. Yale 1875; M. D. Bellevue Hospital Medical College 1881;  
Attending surgeon, Demilt Dispensary 1883-90; Surgeon,  
New York Dispensary 1883-4; Surgeon, Police Department  
city New York 1887; Visiting physician, Charity Hospital  
1889-; Surgeon, Bellevue out-door poor 1884-6; Assistant  
demonstrator of anatomy, Bellevue Hospital Medical Col-  
lege 1883-, Assistant chair of surgery 1885-.

R. W. Greene, M. D. Assistant to the Chair of Principles  
and Practice of Medicine.

1885 Reginald H. Sayre, M. D. Assistant to the Chair of Ortho-  
5 pedic Surgery, 285 Fifth av.

B. A. Columbia 1881; M. D. Bellevue Hospital Medical College  
1884; Assistant to chair of surgery, Bellevue Hospital Medical  
College, 1885-90; Assistant to chair of orthopedic surgery  
1890-; Attending orthopedic surgeon, Out-door department  
Bellevue Hospital 1885-; Member New York State Medical  
Association, American Medical Association, American  
Academy of Medicine, American Orthopedic Association.

Charles B. White, M. D. Assistant to the Chair of  
Obstetrics.

L. M. Silver, M. D. Assistant to the Chair of Obstetrics.

1877 Richard Kalish, M. D. Assistant to the Chair of Materia  
3 Medica and Therapeutics, 50 W. 36 st.

House surgeon, Bellevue Hospital 1877; Lecturer on therapeu-  
tics, Bellevue Hospital Medical College, Summer session  
1880; Visiting surgeon, Charity Hospital, Ophthalmic surgeon,  
Transfiguration Clinic; Author of many medical papers.

W. H. Katzenback, M. D. Assistant to the Chair of Materia  
Medica and Therapeutics.

1887 R. J. Carlisle, M. D. Assistant to the Chair of Materia  
4 Medica and Therapeutics.

M. D. Bellevue Hospital Medical College 1884; Interne,  
Bellevue Hospital 1884-6; Visiting physician, Work-house and  
Alms-house Hospitals.

1889 Austin Flint, jr, M. D. Assistant to the Chair of Physiology,  
1 14 W. 33 st.

M. D. Bellevue Hospital Medical College 1889; House physician,  
Bellevue Hospital.



H. A. Haubold, M. D. Assistant to the Chair of Physiology.

A. H. Doty, M. D. Prosector to the Chair of Anatomy.

C. N. Thompson, M. D. Prosector to the Chair of Anatomy.

1886 Glover C. Arnold, M. D. Prosector to the Chair of Anatomy,  
10 115 E. 30 st.

M. D. Bellevue Hospital Medical College 1873; House surgeon, Bellevue Hospital 1872-4; Prosector and assistant to chair of surgery, Medical Department University of the City of New York 1875-7; Tutor in surgery, Medical Department, University of the City of New York 1876; Instructor in surgery, Mills Training School for Male Nurses 1890 —; Fellow New York State Medical Association.

1888 J. F. Erdmann, M. D. Prosector to the Chair of Anatomy,  
3 159 Lexington av.

M. D. Bellevue Hospital Medical College 1887; House surgeon, Bellevue Hospital 1887-8; Attending surgeon, Bellevue Outdoor poor department; Examiner, Commercial Union Life Insurance Company 1889-90; Surgeon, Employer's Liability Accident Company; Assistant surgeon, 71st Regiment N. G. S. N. Y.

John A. Mandell. Assistant to the Chair of Chemistry, Toxicology and Medical Jurisprudence.

1885 D. W. Hunter, M. D. Assistant to Chair of Ophthalmology  
5 and Otology, 222 W. 23 st.

B. A. Yale 1876; M. D. College of Physicians and Surgeons 1879; House physician and surgeon, Hartford Hospital 1880-1; Assistant surgeon, Manhattan Eye and Ear Hospital 1884-5; Assistant surgeon, New York Eye and Ear Infirmary 1885-90.

R. W. Greene, M. D. Assistant to the Chair of Genito-urinary Surgery.

Joseph N. Henry, M. D. Assistant to the Chair of Dermatology.

Thomas H. Holgate, M. D. Assistant to the Chair of Diseases of Children.

L. S. Rau, M. D. Assistant to the Chair of Diseases of Children.

M. J. Rockwell, M. D. Assistant to the Chair of Diseases of Children.

Edwin H. Griffin, M. D. Assistant to the Chair of Diseases of the Throat.

Edward K. Dunham, M. D. Instructor in Carnegie Laboratories.

Frank Grauer, M. D. Instructor in Carnegie Laboratories.

1873 Henry Goldthwaite, M. D. Examiner in College Recitation  
16 Class, Fifth avenue Hotel.

B. A. Princeton 1860; M. D. Bellevue Hospital Medical College  
1876; Physician, Charity Hospital; Member New York State  
Medical Association.

#### VACANCIES

Isaac E. Taylor, M. A., M. D. President and emeritus  
professor of obstetrics and diseases of women and  
children. Died 30 O 1889.

Alexander B. Mott, M. D. Professor of clinical and oper-  
ative surgery. Died 12 Ag 1889.

#### APPOINTED DURING YEAR

John E. Weeks, M. D. Lecturer on ophthalmology and otology.

#### PROMOTIONS

##### In title alone

William T. Lusk, M. A., M. D. President and professor of obstet-  
rics and diseases of women and children from professor of  
obstetrics and diseases of woman and children.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

##### GRADUATES WITH HONORABLE MENTION

(Not candidates for hospital appointment)

- 1 — Isaac Palmer Ware
- 2 — Irving Eugene Lacey
- 3 — Edward Balthasar Heckel
- 4 — Eugene Adams Smith

##### APPOINTMENTS IN THE RESIDENT STAFF OF BELLEVUE HOSPITAL

- 1 — Jesse Burson Stone
- 2 — Oswald Othniel Cooper
- 3 — William Wetmore Gray

4—Frank Hermann Munkwitz

5—John Elmer Virden

6—Charles Wesley Banks

The college is entitled to two regular appointments each half-year in the resident staff of Bellevue Hospital. The term of service in the hospital, which is required, is as follows: 12 months as a junior and senior assistant, during which time board is to be obtained out of the hospital; and six months in the hospital, when board, lodging and washing are furnished in compensation for services. These appointments are offered by the faculty to undergraduates who are candidates for the degree of M. D., as rewards for superior scholarship. Competitors when they register as candidates for graduation are required to register also as candidates for hospital appointment. The successful candidates are assigned to duty in the hospital in April and October following the examination, and they have the right of election of services, in their order of merit. The two candidates next in order of merit are appointed *externes*, and their term of service is one year, beginning April first. During the service they act as junior assistants, six months in the medical and six months in the surgical wards, with the right of election of time of such service in order of merit. They are appointed, also, according to their rank, to vacancies that occur in the regular hospital staff before the next regular examination.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

(None)

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The regular curriculum embraces the following lectures

### DIDACTIC LECTURES

Lectures  
a week

- 3 Principles and practice of medicine
- 3 Principles and practice of surgery and general surgery
- 1 Orthopedic surgery
- 1 Genito-urinary surgery, syphilology and dermatology

- 3 Obstetrics and diseases of women and children
- 3 Materia medica and therapeutics
- 3 Physiology and physiological anatomy
- 3 Anatomy
- 3 Chemistry, toxicology and medical jurisprudence
- 1 Ophthalmology and otology
- 1 Mental diseases
- 1 Pathological anatomy and subjects connected with general pathology

## CLINICAL LECTURES

Lectures  
a week

- 3 *Practice of medicine* — In addition to the regular clinical teaching in medicine, all candidates for graduation receive practical instruction in medical diagnosis and bedside observation, the class being divided into sections of convenient size.
- 3 *Surgery* — In addition to the regular clinical teaching in surgery, all candidates for graduation receive practical instruction in surgical operations and dressings and in bedside observation, the class being divided into sections of convenient size.
- 2 *Diseases of women and children* — In addition to the regular clinical teaching in this department, all candidates for graduation received practical instruction in gynecology, the class being divided into sections of convenient size.

*Ophthalmology and otology* — The lectures include operations and the presentation of cases illustrative of diseases of the eye and ear. In addition, candidates for graduation receive practical instruction in the use of the ophthalmoscope and in examinations of the ear, in the Bureau of Medical and Surgical Relief for out-door poor.

Bellevue and Charity Hospitals and the Bureau of Medical and Surgical Relief for out-door poor afford abundant resources for clinical instruction.

## DISSECTION

The dissecting-room is open every evening, except Saturday and Sunday, throughout the session. Students are assigned to parts of subjects by the demonstrator, in the order in which their



names appear on the dissection book, six students being assigned to each subject.

Arrangements are made on a large scale for preserving subjects by cold without the use of preservative fluids; and an ample supply of perfectly fresh material is furnished for the use of students.

#### SPECIAL PRACTICAL INSTRUCTION FOR CANDIDATES FOR GRADUATION

The regular curriculum of instruction embraces practical exercises in the departments of medicine, surgery, gynecology and ophthalmology and otology, which have been mentioned in connection with the clinical lectures by the several teachers. In addition to these practical exercises, courses of private instruction, not included in the regular curriculum, designed for graduates and undergraduates, are given as follows:

*Medical diagnosis* — With special reference to diseases of the chest and abdomen — 20 lessons.

*Physical diagnosis* — 20 lessons.

*Operative surgery* — 15 lessons.

*Operative surgery and surgical dressings*, including the treatment of fractures and the application of the plaster jacket and of other orthopedic apparatus and dressings — 20 lessons.

*Physiological laboratory* — Students are received into the physiological laboratory, who act as assistants during the winter session.

*Practical chemistry* — Including the chemical examination of urine in health and disease.

*Carnegie laboratory* — The instructors give private courses in pathology, bacteriology, etc. The laboratories are open during the winter and spring sessions.

*Diseases of the eye and ear* — Instruction is given at the New York Eye and Ear Infirmary — including clinical observation, use of the ophthalmoscope, the application of glasses and surgical operations.

*Diseases of the heart, lungs and throat* — 25 lessons.

The Carnegie Laboratory is devoted mainly to practical work in physiology, pathology, experimental therapeutics and other departments of medicine. The advantages offered by this addition to the educational resources of the college are open to all interested in such work as the laboratories are designed to

promote. The regular laboratory course may be taken during the regular session or during the spring session. This course is exclusively for matriculates of the college who have attended at least one course of lectures on anatomy and physiology, and it consists of instruction in normal and pathological histology and the microscopical examination of urine.

#### SPRING SESSION — RECITATIONS AND LECTURES

The spring session consists of a single term, beginning in the latter part of March and ending about the middle of June. The dissecting-room remains open until about the first of May.

*Recitations* — In the organization of the recitation term, the students are classified as juniors and seniors. The studies for the junior class embrace materia medica, physiology, anatomy and chemistry. The seniors are examined on practice of medicine, surgery, obstetrics and pathological anatomy. Third-course students may take both the junior and senior recitations.

*Microscopical examination of urine* — The members of the junior class receive a practical course on this subject in the Carnegie laboratory.

*Surgical operations on the cadaver* — The members of the senior class receive a course of operative surgery, in which they are required to perform the most important operations in surgery on the cadaver.

*Operative midwifery and gynecology* — The members of the senior class are instructed practically, in connection with the recitations, in the most important operations in midwifery and gynecology, including the use of obstetrical instruments, the introduction of pessaries, etc.

*Post-mortem examinations* — The members of the senior class are instructed in the manner of making autopsies and are required to make post-mortem examinations.

*Anatomical demonstrations* — The dissecting-room is open until about the first of May or as much longer as the weather may permit. For those who take the dissection ticket, demonstrations are made four days in each week by the demonstrator of anatomy and the assistant demonstrators during the entire session.

## REQUIREMENTS FOR GRADUATION

The requirements for graduation, which are invariably and rigidly enforced, are the following :

1 Two full regular courses of lectures on the subjects of practice of medicine, surgery, obstetrics and diseases of women and children, materia medica and therapeutics, physiology, anatomy and chemistry. The only evidences recognized of attendance on lectures are the tickets of lectures or official certificates of attendance. The final course must be the full regular course at the Bellevue Hospital Medical College.

2 Three years' study of medicine, which period of study may include the time spent in attendance on the two courses of lectures required. The three years required date from the time of beginning the study of medicine to the time of graduation. Candidates are required to file with the secretary certificates from their preceptors, covering three full years of study, in which preceptors may include the time spent in attending lectures. A full regular course of lectures, with the spring course either immediately preceding or following such regular course, both having been taken at the Bellevue Hospital Medical College, is accepted as an equivalent of one year of study, for which no preceptor's certificate is required; and three such years of study will fill the requirements of the college as regards time of study.

3 The candidate must have reached the age of 21 years and must file a certificate of good moral character.

4 Certificates of at least one course of practical anatomy, or dissections, either at the Bellevue Hospital Medical College or at some accredited college empowered to confer the degree of M. D., the dissections embracing all parts of a subject.

5 Certificates of at least one course of practical instruction in normal and pathological histology and microscopical examination of urine, taken either at the Carnegie Laboratory or at the laboratory of some recognized medical college.

6 Examinations in each of the seven departments of instruction ; viz., practice of medicine, surgery, obstetrics, materia medica and therapeutics, physiology, anatomy and chemistry. The examinations on practice of medicine and surgery include diseases of the nervous system, pathological anatomy, ophthalmology and otology and genito-urinary surgery, syphilology and dermatology.



Two full courses of lectures are required. In case two regular courses of lectures have been taken within the period of a single year, the second of such courses will be counted as time of study only and will not be recognized as one of the two courses of lectures required for graduation. Two courses of lectures are considered as having been taken within a single year when there has not been an interval of six months between such courses.

To prevent any misapprehension with regard to the requirements for graduations, the faculty desire it to be understood that the only courses of lectures recognized are those taken at regularly organized colleges empowered to confer the degree of M. D., the courses embracing practice of medicine, surgery, obstetrics, materia medica and therapeutics, physiology, anatomy and chemistry. The tickets and diplomas of eclectic, homœopathic or botanic colleges, or of colleges devoted to any peculiar system of medicine, are considered irregular and will not be recognized under any circumstances.

Certificates from preceptors who assume to be practitioners of any peculiar system of medicine, or who advertise, thus violating the code of ethics adopted by the American Medical Association, will not be received under any circumstances.

Examinations for the degree are held at the close of the winter session only; and candidates are not examined at any other time. Candidates who are graduates of other accredited colleges are examined in all the departments, the same as undergraduates, and must fulfil all the requirements demanded of undergraduates. The faculty will not grant a degree to any graduate of three or more years' standing who has not presented to the secretary a certificate of membership in some regular medical society. Graduates of less than three years' standing are required to present to the secretary certificates of membership in a regular medical society or to file certificates of three years' study.

#### SPECIAL EXAMINATIONS FOR THIRD-COURSE STUDENTS

Students who have taken two or more graded courses, including dissections, at other accredited medical colleges, and who present certificates from such colleges of having passed their final examinations in any or all of the subjects of materia medica and therapeutics, physiology, anatomy and chemistry, after having attended two courses of lectures on each of such



subjects, may be examined at the close of the session, on those subjects only in which they have not already passed. Examinations on the primary subjects only are recognized, and not examinations on practice of medicine, surgery or obstetrics. This provision is for the purpose of enabling third-course students who have passed their primary examinations at other colleges to devote their attention specially, during their third course, to the practical departments; but such students must take out a full course of lectures. The faculty do not consider it of advantage to students to attend two regular courses of lectures within a single year; and certificates of having passed examinations in the elementary departments will not be recognized unless there shall have been an interval of at least six months between the first and second courses of lectures.

#### SPECIAL EXAMINATIONS IN THE ELEMENTARY DEPARTMENTS

Students who have attended two full courses of lectures and one course of dissections of all parts of a subject may be examined on materia medica and therapeutics, physiology, anatomy and chemistry at the end of the second course; and if they be successful in these examinations they will be examined at the end of the third course, on practice of medicine, surgery and obstetrics only. The failure of a candidate to appear at one or more of his examinations will invalidate all of his examinations on the primary subjects. The primary examinations are held at the close of the winter session only.

Students who have passed their primary examinations are required to attend another course of lectures before they can be admitted to their final examinations.

#### BUILDINGS

Main building, four story brick, built 1866, floor area 21,000 sq. ft., one lecture room, 368 seats, rented \$4,000 per year. Laboratory, five story brick, built 1885, floor area 15,250 sq. ft., one lecture room, 313 seats, value \$50,000. Museum in main building. Hospital building, four story stone, built 1811, one lecture room, 450 seats.

NEW YORK MEDICAL COLLEGE AND  
HOSPITAL FOR WOMEN

213 W. 54 st., *New York*

HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
14 Ap	1863	Act passed by legislature incorporating New York Medical College for Women, 29 women named in act as corporators and first trustees.
19 Ap	1864	Name changed to New York Medical College for Women and Hospital for Women and Children, and powers somewhat enlarged.
12 Je	1865	Regents changed name to New York Medical College and Hospital for Women.

TRUSTEES

Elected	
1884	President, Rev. Henry S. Day ..... 35 W. 153 st.
1863	Vice-President, Mrs C. Fowler Wells.... 753 Broadway
1884	Second Vice-President, William J. Demorest ..... 21 E. 57 st.
1882	Treasurer, Mme E. L. Demorest ..... 21 E. 57 st.
1880	Corresponding Secretary, Mrs Mary F. Mann, M. D..... 359 Lexington av.
1885	Recording Secretary, Cordelia Williams.. 136 W. 34 st.
1882	Susan King ..... 105 st. and 10 av.
1883	Mrs Mary Day..... 35 W. 153 st.
1886	Mrs Henry Welsh..... 123 Waverly pl.
1886	Mrs Louise Wilson..... 25 Seventh av.
1888	Mrs Robert Burns..... 537 Lexington av.
1888	Mrs Mary Lloyd..... 253 W. 71 st.
1888	Mrs H. Robinson..... 46 E. 10 st.
1889	Mrs Clark Armstrong..... 276 Sixth av.
1889	Mrs Charles Buek..... 408 E. 66 st.

## APPOINTED DURING YEAR

- 1889 Mrs H. L. Bender..... 61 W. 19 st.  
 1890 Mrs N. L. MacBride, M. D ..... 114 W. 47 st.

## VACANCIES

James P. Campbell, resigned O 1889  
 Mrs James P. Campbell, resigned O 1889

## ADMINISTRATION

Figures in column at left give first year of service in New York Medical College and Hospital for Women.

1880 President and Dean, Phoebe J. B. Wait, M. D., Ninth av. and 34 st.

B. A. Alfred University 1860, M. A. 1869; M. D. New York Medical College and Hospital for Women 1871; Graduate New York Ophthalmic Hospital; Chairman hospital staff, New York Medical College and Hospital for Women 1883-; Member consulting staff, Memorial Hospital, Brooklyn 1889-; Member American Institute of Homœopathy 1874, American Obstetrical Society 1885- .

Treasurer, Mme E. L. Demorest, 21 E. 57 st.

1889 Secretary, M. Belle Brown, M. D., 135 W. 34 st.

M. D. New York Medical College and Hospital for Women 1879.

1876 Registrar, Edmund Carleton, M. D. 53 W. 45 st.

16 M. D. New York Homœopathic Medical College 1871; Surgeon, Ward's Island Homœopathic Hospital 1874- ; Consulting surgeon, New York Medical College and Hospital for Women 1882; Special physician, Women's Homœopathic Hospital, Philadelphia 1890- ; Member International Hahnemannian Association 1881.

## INSTRUCTION

Figures in column at left give first year of service in New York Medical College and Hospital for Women and years spent in teaching.

1880 Phoebe J. B. Wait, M. D. President and Dean and Professor of Obstetrics, Ninth av. and 34 st.

See also "Administration."

1883 Louise Gerrard, M. D. Professor of Materia Medica, 83 Madison av.

M. D. New York Medical College and Hospital for Women 1876; Professor of anatomy 1879-83; Professor of materia medica 1883- ; Member medical staff New York College and Hospital for Women 1878-90.

- 1887 H. M. Dearborn, M. D. Professor of Principles and Practice  
6 of Medicine, and Lecturer on Dermatology, 152 W. 57 st.  
M. D. Bowdoin 1869; Assistant to chair of materia medica and  
therapeutics, New York Homœopathic Medical College 1885-87;  
Visiting physician, Ward's Island Homœopathic Hospital  
1881-; Attending physician, Laura Franklin Free Hospital  
1886-; Consulting physician, New York Medical College and  
Hospital for Women 1888; Member New Hampshire State  
Medical Society, New York State Homœopathic Medical  
Society; Associate editor, North American journal of  
homœopathy, 1885- .
- 1875 Edmund Carleton, M. D. Professor of Surgery, 53 W. 45 st.  
16 See also "Administration."
- 1889 M. Belle Brown, M. D. Professor of Diseases of Women,  
2 135 W. 34 st.  
See also "Administration."
- 1883 Juliet P. Van Evera, M. D. Professor of Diseases of  
18 Children, 66 E. 106 st.  
M. D. New York Medical College and Hospital for Women 1872.
- 1887 Thomas C. Williams, M. D. Professor of Physical Diagnosis  
8 and Diseases of the Heart and Lungs and Lecturer on  
Rhinology and Laryngology, 136 W. 34 st.  
M. D. New York Homœopathic Medical College 1881; O. et A.  
Chir. New York Ophthalmic Hospital 1883; Surgeon, New  
York Ophthalmic Hospital; Visiting physician, Five Points  
House of Industry; Member American Institute of Homœo-  
pathy, New York State Homœopathic Medical Society, Society  
for Medico-scientific Investigation.
- 1879 F. H. Boynton, M. D. Professor of Ophthalmology and  
Otology, 34 W. 32 st.  
M. D. New York Homœopathic Medical College 1874; O. et A.  
Chir. New York Ophthalmic Hospital 1875; Professor of  
ophthalmology, New York Homœopathic Medical College;  
Member American Institute of Homœopathy, New York State  
Homœopathic Medical Society.
- 1879 Joseph T. O'Connor, M. D., Ph. D. Professor of Mental  
12 and Nervous Diseases, 51 W. 47 st.  
M. D. Georgetown College 1867; Ph. D. College of St Francis  
Xavier 1876; Professor of chemistry and toxicology, New  
York Homœopathic Medical College 1874-81; Professor of  
chemistry, College of St Francis Xavier 1876, Professor of  
materia medica, New York College and Hospital for Women  
1879-80; Professor of mental and nervous diseases 1886-;  
Clinical professor of nervous diseases, New York Homœo-  
pathic Medical College 1887-; Associate editor New York  
Journal of homœopathy.



1890 Emily Kempin, LL. D. Professor of Medical Jurisprudence,  
47 E. 59 st.

1886 Annie Smith Campbell, M. D. Professor and Demonstrator  
5 of Anatomy, 58 W. 129 st.

M. D. New York Medical College and Hospital for Women 1882.

1889 Bushrod W. James, M. A., M. D. Professor of Physiology,  
2 Cor. Greene and 18 sts., Philadelphia.

M. A. Philadelphia Central High School; M. D. Homœopathic Medical College of Pennsylvania 1857; Member American Society for the Advancement of Science, American Public Health Association, American Academy of Political and Social Science, Historical Society of Pennsylvania, Historical Society of Alaska, Academy of Natural Science, Philadelphia, Franklin Institute, New York State Homœopathic Medical Society; Ex-president, American Institute of Homœopathy, Pennsylvania, Pennsylvania State Homœopathic Medical Society, American Literary Union; President Children's Homœopathic Hospital of Philadelphia; Surgical editor American observer of Detroit; Author American resorts and climates.

W. Storm White, M. D. Professor of Pathological Anatomy and Histology and Lecturer on Histology, 353 Fifth av.

See also New York Homœopathic Medical College.

1890 Louise Ziegelmier Buckholz, M. D. Professor of Chemistry,  
112 E. Seventh st.

M. D. New York Medical College and Hospital for Women 1886.

1883 Martha L. Holbrook, M. D. Professor of Hygiene,  
46 E. 21 st.

M. D. New York Hygeo-therapeutic Medical College 1863; Member American Society of Microscopy; Author Parturition without pain, 1869, Food and work, 1872, Hygiene of the brain, 1876, Marriage and parentage in their sanitary relations, 1878, How to strengthen the memory, 1886.

1888 Euphemia J. Myers Sturtevant, M. D. Lecturer on Minor  
5 Surgery and Assistant to the Chair of Surgery, 302 W. 12 st.

M. D. New York Medical College and Hospital for Women 1883;  
Member International Hahnemannian Association 1888.

1889 Mary E. Grady, M. D. Adjunct Professor of Physiology,  
2 436 Monroe st., Brooklyn.

M. D. New York Medical College and Hospital for Women 1884;  
O. et A. Chir. New York Ophthalmic Hospital 1886; Member American Institute of Homœopathy, Memorial Hospital Staff, Brooklyn; Oculist, Memorial Hospital.

1889 Helen Cox O'Connor, M. D. Lecturer and Assistant to the  
2 Chair of Gynecology, 51 W. 47 st.

M. D. New York Medical College and Hospital for Women 1887.

1889 Rita Dunlevy, M. D. Assistant to Chair of Practice and to  
2 Chair of Surgery, 248 W. 54 st.

M. D. New York Medical College and Hospital for Women 1888;  
Resident physician, New York Medical College and Hospital  
for Women 1888-9, Attending physician, Dispensary of same;  
Lecturer on health to West End Club for Working Girls.

1890 Maria H. Brokhaus, M. D. Assistant to the Chair of Physi-  
cal Diagnosis, 178 Hudson st., Hoboken, N. J.

1889 Louise Lannin, M. D. Lecturer on Materia Medica, 240  
2 W. 48 st.

M. D. New York Medical College and Hospital for Women 1886.

Nellie Campbell Graham, M. D. Lecturer on Histology.

#### APPOINTED DURING YEAR

Emily Kempin, LL. D. Professor of medical jurisprudence.

Rita Dunlevy, M. D. Assistant to the chair of practice.

Maria H. Brokhaus, M. D. Assistant to the chair of physical  
diagnosis.

Louise Lannin, M. D. Lecturer on materia medica.

#### HONORARY DEGREES

(None)

#### COLLEGE APPOINTMENTS

Valedictory, Gertrude Allen

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

*(Values not given)*

Lozier gold medal for best thesis, Gertrude Allen.

First prize for highest standing in ophthalmology and otology,  
Lillian Dell.

Second prize for next highest standing in ophthalmology and  
otology, Gertrude Allen.

Demorest gold medal for best examination in physiology,  
Lillian Dell.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

## METHOD OF INSTRUCTION

Under the old system, in which students were required to attend lectures for seven hours daily and dissect in the evening, no study could be done ; but, by adoption of the graded course, the student can review the notes of the day and compare them with her textbooks before listening to the lectures of the succeeding day. Under our present system, each professor is expected to question the class upon the subjects previously studied, thus bringing into relief the salient features of the lecture, and at the same time detecting difficulties in the minds of the students, while stimulating them to study and thorough work.

## CLINICAL ADVANTAGES

Cities are naturally the centers for clinical advantages ; it is, however, in New York only that the homeopathic student finds large hospitals for the treatment of disease. The Ward's Island Hospital, the New York Ophthalmic Hospital, the Laura Franklin Free Hospital for Children, and numerous dispensaries, afford privileges of study to both women and men. There are, moreover, a hospital and dispensary connected with this college, in which are treated, especially, the diseases peculiar to women, and from which is afforded abundant material for the clinics of the college. Obstetrical cases are admitted, and placed in the hands of the students of the graduating class, under the supervision of the physicians of the hospital and the professor of obstetrics. During the season general clinics are held before the class. Since our large hospitals are closed to women as practitioners, and since clinical instruction is of paramount importance, it is designed by the trustees to create the best possible opportunities for our students through our own hospital and dispensary.

## CLINICS

The supply for general clinics is drawn from our own dispensary and hospital. Each case is referred to the chair under which the disease properly belongs. These clinics afford admirable oppor-



tunity to the members of the senior class. Every case is carefully diagnosticated by the professor, and students are called on to prescribe, thus helping to establish them in this most useful part of their future work.

#### PRACTICE AND DERMATOLOGY

Professor Dearborn's general clinic each week is supplied with a variety of cases coming chiefly from our own dispensary. The instruction derived from this source is of incalculable benefit to the students. Professor Dearborn also holds weekly clinics during different parts of the course, at the Ward's Island Hospital and at the Laura Franklin Free Hospital for Children.

#### SURGERY

Professor Carleton holds surgical clinics on Wednesday afternoons at the college hospital. He also conducts clinics at the homeopathic hospital, Ward's Island.

In our hospital important operations are performed, and students become familiar with special and general surgery, while at Ward's Island a wide range of surgical practice is illustrated. Special care is taken to demonstrate the vast superiority of homeopathic over all other kinds of treatment in the conduct of surgical cases to a successful issue.

#### MENTAL AND NERVOUS DISEASES

Professor J. T. O'Connor, who makes a specialty of the treatment of mental and nervous diseases, from time to time illustrates his lectures by clinical material drawn from our hospital and dispensary or from his own private clinics.

#### OPHTHALMOLOGY AND OTOTOLOGY

Students enjoy excellent opportunities for studying diseases of the eye and ear. Professor Boynton gives to our students a clinic each Saturday at the Ophthalmic Hospital, where every disease and operation peculiar to this department may be observed.

#### DISEASES OF WOMEN

Through the dispensary connected with our hospital, Professor Brown is enabled to obtain clinical material for a weekly gynecological clinic, and it is her endeavor to supplement each subject



taught with clinical instruction. Students are expected to examine patients and are taught to make diagnoses with the assistance of their professor, which greatly facilitates their work when thrown upon their own resources.

#### DISEASES OF THE CHEST, NOSE AND THROAT

Professor Williams conducts clinics before the advanced students, giving them an opportunity of familiarizing themselves with normal as well as diseased conditions of the heart, nose, throat and lungs. The importance of these clinics can hardly be overestimated.

#### OBSTETRICS

Our hospital provides material for an obstetric clinic which is made use of by Professor Wait. The class is taught, in the wards, the practical part of obstetrics, under the eye of the professor. Each obstetrical case in the hospital is under the observation of a limited number of students.

#### DEMONSTRATIONS IN ANATOMY

The college is amply provided with fine charts and models, while the large and commodious dissecting-room, convenient to the college, is abundantly supplied with material from the Charity Hospital of the city, and demonstrations are constantly made upon the cadaver.

#### DEMONSTRATIONS IN PHYSIOLOGY

In addition to the lectures and quizzes by the professor of physiology, physiological demonstrations are included in the curriculum.

#### LABORATORY WORK

The chemical laboratory is amply supplied with all necessary apparatus, and chemical experiments are daily performed before the class by the professor.

#### REGULATIONS OF THE COURSE

In order to elevate the standard of scholarship, the trustees have made the course unequivocally a three years' graded course. Students from other colleges must therefore bring satisfactory

evidence of their term of pupilage, in order to receive credit for the same; as they will under no circumstances be awarded the diploma of this college, without having taken a three years' graded course.

While studying one year with a preceptor may be excellent preparation for entering college, it can not take the place of the instruction given during the first year in college; hence this decision by the board. It is believed that the advantages of this plan will be appreciated by all women who desire to obtain a superior medical education, and it is only such whom this college intends to graduate.

Advanced students may attend the lectures of previous years, if they so desire; otherwise, students are expected to adhere rigidly to the curriculum.

Students can not exempt themselves from lectures except by permission of the professor, and repeated non-attendance, without permission, will be held sufficient reason for refusing candidates an examination.

No student can receive a final examination in anatomy who has not dissected to the satisfaction of the professor of anatomy.

Tickets will be given by the several professors, at the close of the session, as certificates of attendance.

## SYNOPSIS OF STUDIES

### *First-junior year*

Theoretic and inorganic chemistry, physiology, general and descriptive anatomy, histology, medical jurisprudence and hygiene. Dissections and laboratory work will be obligatory on all students of this year.

### *Second-middle year*

Anatomy, organic chemistry with toxicology, histology and pathological anatomy, physiology, hygiene, materia medica, medical jurisprudence, surgery, gynecology, diseases of children, obstetrics, pathology and practice of medicine. Students of this year are expected to finish their dissections to the satisfaction of the professor of anatomy. They will also be required to attend the lectures in ophthalmology and otology, diseases of the chest and mental and nervous diseases, but will not be subject to quizzes in these branches.

*Third-senior year*

Pathology and practice of medicine, materia medica, obstetrics, gynecology, diseases of children, surgery, ophthalmology and otology, diseases of the chest, pathological anatomy and mental and nervous diseases. During this year students are required to attend the various clinics of the college. Each student will also be required to take charge of obstetrical cases.

**REQUIREMENTS FOR GRADUATION**

Candidates for the degree of doctor of medicine must be 21 years of age, and must have studied medicine three years.

They must have attended three complete courses of lectures, the senior year of which shall have been in this college.

Each candidate must place with the secretary of the faculty, an original thesis on some medical subject, and in her own handwriting, which she must be prepared to defend before the faculty.

Candidates who have complied with these requirements, and who shall have passed satisfactory examinations before the faculty and censors, will have the degree of M. D. conferred on them at the annual commencement.

**BUILDINGS**

Main building, three story brick, two class rooms, each 50 seats, rented for \$2,000 per year. Class room building, two story brick, two class rooms, each 25 seats.

# WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY FOR WOMEN AND CHILDREN

128 *Second av., New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
13 Ap	1864	Legislature changed corporation known as New York Infirmary for Indigent Women and Children to New York Infirmary for Women and Children, and enlarged its powers for establishment of a college for women with the above title.
	1877	Division of medical studies into winter and spring course abolished; college year to consist of a single uniform course from October to June.

## TRUSTEES

### Elected

1887	President, Robert Haydock.....	212 E. 12 st.
1889	Treasurer, John T. Willets .....	303 Pearl st.
1887	Secretary, Henry W. de Forest.....	15 W. 30 st.
1887	Mrs Josiah L. Chapin.....	175 Second av.
1887	Julia Cooper .....	113 E. 21 st.
1887	Julia B. de Forest.....	15 W. 30 st.
1887	Grace H. Dodge .....	262 Madison av.
1887	Mrs William B. Parsons.....	244 E. 13 st.
1887	Mrs Alfred Roosevelt.....	19 E. 54 st.
1887	Dr J. West Roosevelt.....	32 E. 31 st.
1887	Mrs D. M. Stimson .....	11 W. 17 st.
1887	Mrs Louis C. Tiffany.....	7 E. 72 st.
1887	Mrs John T. Willets.....	55 W. 54 st.
1887	Mrs James B. Wright.....	137 E. 15 st.
1888	Mrs P. M. Bryson .....	26 E. 38 st.
1888	Mrs John J. Carle .....	218 E. 12 st.
1888	Mary Collins .....	133 E. 36 st.
1888	Mrs Elizabeth G. Custer .....	41 E. 10 st.
1888	Mrs W. P. Griffin .....	208 E. 15 st.



## Elected

1888	Mrs Thomas Hicks .....	62 E. 49 st.
1888	Mrs Robert Olyphant .....	26 E. 46 st.
1888	Robert Olyphant.....	26 E. 46 st.
1888	Mrs James W. Pinchot .....	2 Gramercy park
1888	Edward C. Sampson.....	10 W. 48 st.
1888	Annie Stone .....	25 E. 45 st.
1888	Helen Talbot .....	62 Fifth av.
1888	Mrs Lucius Tuckerman .....	22 Washington pl.

## APPOINTED DURING YEAR

1889	Dr Emily Blackwell .....	53 E. 20 st.
1889	Elizabeth Bunting.....	216 E. 12 st.
1889	Mrs Robert Haydock.....	212 E. 12 st.
1889	Mrs Robert Hoe, jr .....	11 E. 36 st.
1889	Helen Iselin.....	83 Clinton pl.
1889	Rachel Kennedy .....	41 Fifth av.
1889	Cornelia T. Kirby.....	53 E. 25 st.
1889	James W. Pinchot .....	2 Gramercy park
1889	Dr D. M. Stimson.....	11 W. 17 st.
1889	Edwin Tatham .....	82 Beekman st.
1889	Mrs Henry Villard.....	7 E. 72 st.

## VACANCIES

Charles E. Butler, resigned N 1889

Charles L. Atterbury, resigned N 1889

Lucius Tuckerman, died Je 1890

## ADMINISTRATION

Figures in column at left give first year of service in Woman's Medical College.

1865 Dean, Emily Blackwell, M. D.

M. D. Western Reserve University, Medical Department.

Sub-Dean, Cora Thompson.

Treasurer, John T. Willets, 303 Pearl st.

Assistant Treasurer, Julia B. de Forest.

Librarian, Ellen K. Lente.

## INSTRUCTION

Figures in column at left give first year of service in Woman's Medical College and years spent in teaching.

Elizabeth Blackwell, M. D. Emeritus Professor of Hygiene.

James R. Leaming, M. D. Emeritus Professor of the Principles and Practice of Medicine.

1865 Emily Blackwell, M. D. Dean and Professor of Obstetrics  
26 and Gynecology.

See also "Administration."

1881 Josephine Chevalier, M. D. Professor of Chemistry and  
11 Lecturer on Materia Medica, 69 W. 12 st.

Special student in chemistry, Cornell 1877-80; Assistant in chemistry, Institute of Technology 1880-1.

1884 Henry Mann Silver, M. D. Professor of Surgery.

8 B. A. Dartmouth 1872; M. D. Bellevue Hospital Medical College 1875; Member American Medical Association.

1889 George Roe Lockwood, M. D. Professor of Practice, 30  
E. 35 st.

B. A. College of the City of New York 1881; M. D. College of Physicians and Surgeons 1884; House physician, New York Hospital 1884-6; Clinical assistant, Vanderbilt Clinic 1889.

1888 W. Gilman Thompson, M. D. Professor of Physiology,  
10 49 E. 30 st.

Ph. B. Yale 1877; M. D. College of Physicians and Surgeons 1881; Professor of physiology, University of the City of New York, Medical department 1887; Member Association American Physicians, American Physiological Society.

1881 R. W. Amidon, M. D. Professor of Therapeutics, 19  
9 W. 21 st.

B. A. Amherst 1874, M. A. 1879; M. D. College of Physicians and Surgeons 1877; Editor Epitome of medicine; Author Students manual of electro-therapeutics, 1884.

1879 Elizabeth M. Cushier, M. D. Lecturer Adjunct to the Chair  
12 of Obstetrics and Gynecology, 53 E. 20 st.

M. D. Woman's Medical College 1872; Member New York Academy of Medicine.

- 1889 Lucius W. Hotchkiss, M. D. Professor of Anatomy, 30  
2 E. 35 st.

B. A. Columbia 1881; M. D. College of Physicians and Surgeons 1884; House surgeon, Bellevue Hospital 1885-6; Assistant surgeon, Roosevelt Hospital Dispensary; Assistant attending surgeon, Bellevue Hospital; Attending surgeon, Colored Hospital; Fourth assistant demonstrator of anatomy, College of Physicians and Surgeons 1890; Lecturer on anatomy, Woman's Medical College 1889-90; Professor of anatomy, 1890- .

- 1889 Mary T. Bissell, M. D. Professor of Hygiene.

2 B. A. Vassar 1875; M. D. Woman's Medical College 1881; Author Household hygiene.

- 1890 John Slade Ely, M. D. Lecturer on Histology and Patho-  
3 logical Anatomy, 147 W. 73 st.

Ph. B. Yale 1881; M. D. College of Physicians and Surgeons 1886; Assistant in pathology, College of Physicians and Surgeons 1888- , Assistant curator of museum 1890- .

- 1886 George W. Jacoby, M. D. Clinical Professor of Nervous  
5 Diseases, 100 E. 58 st.

M. D. Bellevue Hospital Medical College 1876, University of Berlin 1877; Neurologist, German Hospital; Fellow New York Academy of Medicine, American Neurological Association.

- 1887 Samuel Ketch, M. D. Clinical Professor of Orthopedic  
4 Surgery, 328 W. 29 st.

M. D. Bellevue Hospital Medical College 1875; House surgeon, Orthopedic Hospital 1877-9; Senior assistant surgeon, Orthopedic Dispensary and Hospital 1879- ; Visiting orthopedic surgeon, Randall's Island hospitals; Fellow New York Academy; Medical corresponding secretary American Orthopædic Association; Author of numerous medical articles.

Henry D. Chapin, M. D. Clinical Professor of Diseases of Children.

- 1886 Willy Meyer, M. D. Professor of Surgery, 700 Madison av.

5 M. D. University of Bonn 1880; Instructor in surgery, New York Post-Graduate Medical School and Hospital 1888; Attending surgeon, German Hospital and New York Skin and Cancer Hospital.

- 1886 William Oliver Moore, M. D. Clinical Professor of Diseases  
15 of the Eye and Ear.

M. D. College of Physicians and Surgeons 1872; D. V. S. Columbia Veterinary College 1878; Interne, Charity Hospital 1872-4; House Surgeon, New York Eye and Ear Infirmary 1874-8; Professor of diseases of the eye and ear, University of Vermont 1883-9; Professor of diseases of the eye and ear, New York Post-Graduate Medical School 1882-; Member New York Academy of Medicine; Author of numerous medical articles.

- Gertrude B. Kelly, M. D. Demonstrator in Anatomy and  
3 Clinical Instructor, 325 E. 17 st.

M. D. Woman's Medical College 1888.

- 1887 Mary E. Herrick, M. D. Demonstrator in Histology and  
3 Clinical Instructor.

M. D. Woman's Medical College 1884.

- 1889 Alice E. Wakefield, M. D. Assistant Demonstrator and  
2 Clinical Instructor, 119 E. 76 st.

M. D. Woman's Medical College 1889.

- 1890 Annie S. Daniel, M. D. Clinical Professor of Diseases of  
3 Children, 314 E. 15 st.

M. D. Woman's Medical College 1879.

Eleanor B. Kilham, M. D. Instructor in Obstetrics and  
Clinical Instructor.

- 1885 Elizabeth Stow Brown, M. D. Instructor in Gynecology  
5 and Clinical Instructor, 4 Rutherford pl.

M. D. Woman's Medical College 1885.

- 1889 Maria M. Vinton, M. A., M. D. Instructor in Practice of  
Medicine and Clinical Instructor.

B. A. Smith 1882, M. A. 1886; M. D. Woman's Medical College 1886; Assistant house physician, Post-Graduate Hospital 1886-7; Attending physician, New York Infirmary; Clinical assistant, Nervous department Morebotlan Eye and Ear Infirmary 1888-.

- 1889 Caroline F. Hamilton, M. D. Instructor in Practice of  
2 Medicine and Clinical Instructor, 61 st. and 10 av.

B. A. Smith 1885; M. D. Woman's Medical College 1888.



## ATTENDING PHYSICIANS AND CLINICAL INSTRUCTORS

- 1884 Julia G. McNutt, M. D. Clinical Instructor, 265 Lexington av.  
7 M. D. Woman's Medical College.
- 1888 S. A. French, M. D. Clinical Instructor, 217 W. 34 st.  
3 Attending surgeon, Dispensary New York Infirmary 1888-90;  
Attending gynecologist 1890- ; Assistant out practice department, Hospital for the Ruptured and Crippled 1889- .
- 1888 Kate L. I. Sterling, M. D. Clinical Instructor in Gynecology,  
3 87 Lexington av.  
M. D. Woman's Medical College of Pennsylvania 1886.
- 1889 Elizabeth Johnson, M. D. Clinical Instructor, 68 W. 38 st.  
3 M. D. University of Buffalo, Medical Department 1887; Graduate New York Hospital Training School; Editor Medical department Scientific American.
- Caroline A. Herring, M. D. Dispensary Physician, 325  
1 W. 15 st.  
M. D. Woman's Medical College 1890.
- 1887 C. E. Brown, M. D. Assistant Professor Diseases of the  
Eye and Ear, 151 E. 31 st.  
M. D. Columbus Medical College 1887; Attending physician, Dispensary Woman's Medical College, Department throat, eye and ear; Attending physician, Demilt Dispensary, nose and throat department.
- Martha Wollstein, M. D. Clinical Instructor.
- 1890 Caroline A. Cabot, M. D. Clinical Instructor in Department  
2 of Medicine, 159 W. 48 st.  
M. D. Woman's Medical College 1887; Attending physician, Woman's Medical College; Attending physician, Neurological Department, New York Orthopædic Dispensary and Hospital.
- 1890 Anna M. Galbraith, M. D. Clinical Instructor, 68 W. 50 st.  
M. D. Woman's Medical College, Pennsylvania 1884; Attending physician, Woman's Medical College; Attending physician, Neurological Department New York Orthopædic Dispensary and Hospital; Member American Electro-therapeutic Association.
- A. H. Ward, M. D. Clinical Instructor.

## VACANCIES

A. R. Robinson, M. D. Professor of histology and pathological anatomy. Resigned Je 1890.

## APPOINTED DURING YEAR

John Slade Ely, M. D. Lecturer on histology and pathological anatomy, Je 1890.

## PROMOTIONS

R. W. Amidon, M. D. Professor of therapeutics from lecturer on the same.

L. W. Hotchkiss, M. D. Professor of anatomy from lecturer on the same.

Mary T. Bissell, M. D. Professor of hygiene from lecturer on the same.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The plan of instruction is carried out in a graded course of studies, in which the students are led along from one subject to another in their natural order of difficulty and complexity. The plan emphatically condemns the current method of encouraging students to attempt the simultaneous pursuit of eight or nine difficult, abstruse and entirely unfamiliar subjects.

*First year* — Anatomy, chemistry, physiology, materia medica, physics and histology. Students also dissect, and work in the pharmaceutical, chemical and histological laboratories.

*Second year* — Anatomy and physiology completed, pathological anatomy, practice, surgery, obstetrics, therapeutics and hygiene begun.

*Third year* — Pathological anatomy, practice, surgery, obstetrics and therapeutics completed.

The work of this year is largely practical. A system of clinical instruction in the dispensary, out practice, and infirmary wards has been organized, of which the details are given under the head of clinical instruction.

*Division of second year* — Students who wish to take a three years' course in four years must divide the studies of the second year. In this scheme two full college years will be given to anatomy, physiology, chemistry, materia medica and histology. The remaining two years are occupied exclusively with practice, surgery, obstetrics, therapeutics, pathological anatomy, hygiene and clinics.

#### METHODS OF INSTRUCTION

The didactic instruction in each branch consists of 60 lectures and quizzes by the professor, and a weekly quiz by the instructor in the department.

The lectures are fully illustrated by charts, diagrams, experimental demonstrations, etc., according to the nature of the subject. A large part of the instruction is carried on in the different departments of practical work.

*Anatomical rooms* — The anatomical rooms are large, well lighted and conveniently fitted up. Systematic anatomy is taught almost entirely by demonstrations and quizzes in these rooms by the demonstrator to students of the first year. Dissections occupy from four to six hours daily during six months of the first year. Each student is required to make two careful dissections of each part, and a certificate as to quality as well as amount done is required before passing the anatomical examination. In the second year students complete their dissection and pursue the study of regional and surgical anatomy under the professor of anatomy, whose lectures and demonstrations are specially devoted to this more advanced instruction.

*Chemical laboratory* — The laboratory for instruction in chemistry, physics and materia medica is adapted for classes of 50 students. It has all modern conveniences for work and is under the direction of Professor Josephine Chevalier. Instruction in chemistry is given in the first term of the first year. The first part of the term is devoted to the study of descriptive and theoretic medical inorganic chemistry; the second to organic chemistry. Each student receives, during the first term, practical instruction in qualitative chemical analysis; one hour a week being given to an oral examination on the work done in the laboratory. In the first term of the junior year there is a course of urine analysis which comprises a short course of quantitative



chemical analysis in the wet way. Each course of laboratory instruction is accompanied by a series of printed questions which the students answer in a note-book. In this way attention is called to important points which might otherwise escape notice.

In the second term instruction is given in physics and materia medica, including a short course in pharmacy and medical botany.

Students bringing certificates of a course of study in inorganic chemistry or biology, including laboratory work, from Cornell, Massachusetts Institute of Technology, Bryn Mawr, Vassar, Wellesley, or Smith Colleges, will be excused from corresponding study here.

*The Wadleigh Histological Laboratory* has been equipped by means of the memorial fund given by the former pupils of the late Lydia F. Wadleigh, for many years principal of the 12th street high school for girls, and a warm friend to the higher and professional education of women. It occupies a long, well lighted room, is provided with tables, microscopes and accessory apparatus, microtome, etc., in a very complete manner, and accommodates classes of 30 students at a time. This department is under the charge of Dr John Slade Ely assisted by Dr Mary E. Herrick. Students beginning with simple histology pass on to pathological anatomy and bacteriology. The teaching in this department is almost exclusively practical and continues through the three years.

*Alumnæ Physiological Laboratory* — A beginning has been made toward the equipment of a physiological laboratory, the sum of \$1,000 having been contributed by the alumnæ of the school for this purpose. The laboratory will be under the superintendence of Professor W. Gilman Thompson, and will contain all the most essential apparatus for illustrating modern researches in physiology.

#### CLINICAL INSTRUCTION

The most distinctive feature of the third year is the clinical instruction. It is evident that this should be the keystone of the entire curriculum, toward which everything else should be made to converge. The numerous relations held by the different



teachers of this school with other institutions are largely utilizable and utilized for the benefit of its students.

Weekly clinics are held at the college as follows :

General medicine, surgery, gynecology, children, skin, eye and ear, orthopedic surgery, nervous diseases, obstetric examinations, course in operative surgery, course in bandaging.

The senior students are divided into small groups for individual instruction in the classes of the dispensary which are held daily ; this will be given by the physicians of the dispensary and the instructors in the different branches.

As there are about 7,000 patients treated in the dispensary annually, the material for instruction is abundant, and senior students also see patients in the out practice, under the direction of Dr A. S. Daniel, physician in charge of this department.

For the juniors a special course in physical diagnosis is arranged.

*Obstetric instruction*—Each student resides in the infirmary long enough to attend 10 obstetric cases, under the direction of the resident physician. Senior students also attend the operations at the infirmary, both in gynecological and general surgery ; the number performed last year was 77.

Arrangements will be made for fuller clinical instruction at the infirmary during the present year, and a course in gynecological surgery will be given by Professor Cushier.

*Hospitals and city dispensaries*—The New York Infirmary is the hospital especially attached to the school, and its internes are chosen from the graduates of the college. All the city dispensaries are open to the students of this school. The Demilt is within a few minutes' walk of the college. 20,000 patients are here treated annually and clinics are held daily.

Students have the full privilege of the Bellevue Hospital clinical lectures held by professors from the leading medical schools of the city.

They can also attend lectures and surgical operations at the New York Hospital, Presbyterian Hospital, Mt Sinai Hospital, New York Eye and Ear Infirmary, and Manhattan Eye and Ear Infirmary. The professor of surgery holds a weekly clinic at Gouverneur Hospital.

## REQUIREMENTS FOR GRADUATION

Every candidate must be 21 years of age and of good moral character ; must give evidence of having studied medicine during three years ; have spent at least one continuous year at this school (if only one, this must be the last year) ; have presented a satisfactory thesis ; and have passed the required examinations.

## BUILDINGS

The college is an adjunct of the New York Infirmary for Women and Children and has no separate corporate property.

## NEW YORK COLLEGE OF DENTISTRY

245 E. 23 st., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

31 Mr 1865 Incorporated by legislature with power to confer degree of D. D. S.

3 Ap 1867 Above act amended by enabling trustees to confer degree of fellow of the college of dentistry (F.C. D.), with consent of regents, on such persons as had made valuable contributions to dental science.

## TRUSTEES

Elected

—— President (vacant)

1878	Vice-President, William T. LaRoche, D. D. S.	67 W. 54 st.
1868	Treasurer, Alexander W. Stein, M. D.	30 W. 15 st.
1890	Secretary, Robert Sturgis, B. A., LL. B.	46 Wall st.
1865	Faneuil D. Weisse, M. D.	46 W. 20 st.
1867	Stephen A. Main	666 Fifth av.
1868	Frank Abbott, M. D.	22 W. 40 st.
1869	B. F. Batchelder	138 W. 21 st.
1869	F. LeRoy Satterlee, M. D., Ph. D.	8 W. 18 st.
1876	John Allen, D. D. S.	716 Fifth av.
1878	J. Bond Littig, D. D. S.	113 W. 47 st.
1883	Alfred M. Hoyt	934 Fifth av.

## APPOINTED DURING YEAR

- 1890 General Clifford A. H. Bartlett, B. A. . . . . 168 Nassau st.  
 1890 Hon. J. Hampden Robb, B. A. . . . . 52 E. 34 st.

## VACANCIES

President, M. McN. Walsh, M. A., died Je 1889

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. College of Dentistry.

1866 Dean, Frank Abbott, M. D. 22 W. 40 st.

M. D. University of the City of New York, Medical Department  
 1871; Member New York Academy of Medicine, American  
 Dental Association, Dental Society State of New York,  
 American Academy of Dental Science, New York Academy of  
 Science, American Geographical Society.

1868 Treasurer, Alexander William Stein, M. D.

Professor of physiology, American Veterinary College 1875- ;  
 Author Tumors of bladder.

1869 Secretary, Frank LeRoy Satterlee, M. D., Ph. D.

1884 Chaplain, Rev. James Tuttle Smith, D. D.

Superintendent of Infirmary, J. A. Bradshaw, M. A. 46 W.  
 17 st.

B. A. Pennsylvania College 1847, M. A. 1850.

Secretary of Infirmary, Mrs M. E. Dunne.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. College of Dentistry and  
 years spent in teaching.

1865 Faneuil Dunkin Weisse, M. D. Professor of Anatomy and  
 Oral Surgery.

1866 Frank Abbott, M. D. Dean and Professor of Dental Sur-  
 24 gery and Therapeutics.

See also "Administration."

1868 Alexander William Stein, M. D. Professor of Visceral  
 24 Anatomy, Physiology and Histology.

See also "Administration."

1869 Frank LeRoy Satterlee, M. D., Ph. D. Professor of Chem-  
 istry and Metallurgy.

1871 James Bond Littig, D. D. S. Professor of Mechanical  
20 Dentistry, 113 W. 47 st.

D. D. S. Baltimore Dental College 1861; Demonstrator, New  
York College of Dentistry 1871-8.

1882 Frank W. Jackson, M. D. Lecturer on Anæsthetics, 12  
9 W. 18 st.

1881 Carl Heitzmann, M. D. Lecturer on Dental Histology, 39  
10 W. 45 st.

M. D. University of Vienna 1859; Lecturer on morbid anatomy,  
University of Vienna 1873; Director, laboratory for micro-  
scopical research 1874; Member American Association of  
Anatomists; Honorary member Society of Physicians,  
Vienna; Author, Descriptive and topographical anatomy,  
1889, Microscopic morphology, 1883.

1882 F. Hasbrouck, D. D. S. Lecturer on Nitrous Oxide.

1884 Silas C. Blaisdell, M. D. Assistant to the Chair of Anatomy  
and Oral Surgery.

1884 Alfred R. Starr, D. D. S., M. D., Assistant to the Chair of  
6 Dental Surgery and Therapeutics, 164 E. 91 st.

M. D. College of Physicians and Surgeons 1880; D. D. S. New  
York College of Dentistry 1880; Member Dental Society State  
of New York, American Dental Association.

1886 Thomas W. Onderdonk, D. D. S. Assistant to the Chair of  
4 Mechanical Dentistry, 160 W. 46 st.

D. D. S. New York College of Dentistry 1886; Demonstrator,  
1886-8.

1889 E. Austin Oothout, E. M. Assistant to the Chair of Chemistry  
and Metallurgy.

#### CLINICAL STAFF

Director, Martin Charles Gottschaldt, D. D. S., M. D.

William Tell La Roche, D. D. S., 67 W. 54 st.

20 D. D. S. New York College of Dentistry 1875; Member Inter-  
national Congress 1888.

1880 Frank A. Roy, D. D. S., M. D., 148 W. 70 st.

5 D. D. S. New York College of Dentistry 1879; M. D. University of  
the City of New York, Medical Department 1879; Demonstrator  
New York College of Dentistry 1880-1; Lecturer on physiology  
1887-8; Clinical instructor 1885- .



Sherman B. Price, D. D. S.

1885 Thomas A. Fletcher, D. D. S. 67 W. 54 st.

6 Dental surgeon, Hospital for the Ruptured and Crippled, New York Juvenile Asylum; Member State Dental Society, Medical Congress 1888.

1884 Alfred R. Starr, D. D. S., M. D.

6 See also above.

William C. Deane, D. D. S., M. D.

1883 R. McL. Sanger, D. D. S. East Orange, N. J.

8 D. D. S. New York College of Dentistry 1881; Lecturer on Prosthetic dentistry 1886-8, Member of clinical staff 1883-; Member New Jersey State Dental Society.

1886 Charles A. Dubois, D. D. S. 145 E. 29 st.

D. D. S. New York College of Dentistry 1882.

William Carr, D. D. S., M. D.

Charles L. Dubar, D. D. S., M. D. S. 451 W. 22 st.

D. D. S. Albany 1875, M. D. S. 1881.

R. H. Hofheinz, D. D. S.

1883 H. H. Sisson, D. D. S., 64 W. 52 st.

7 Demonstrator of operative dentistry 1883-6.

1889 William E. Truex, D. D. S., Frechow, N. J.

2

L. H. Finley, D. D. S.

1881 Joseph J. Strohmeyer, D. D. S. 231 Lexington av.

D. D. S. New York College of Dentistry 1884.

1884 William J. Caillé, D. D. S. 43 E. Seventh st.

Demonstrator, 1884-7; Superintendent dental department, German Dispensary 1887-.

1889 Benjamin F. Luckey, D. D. S. Clinical Operator, 182 Main

2 st., Paterson, N. J.

D. D. S. New York College of Dentistry 1879; Member American Dental Association, New York State Dental Association.

1890 Frank J. McLaren, D. D. S. Clinical Instructor, 163

1 W. 48 st.

D. D. S. New York College of Dentistry 1887.

## SPRING COURSE LECTURERS

- 1884 Silas C. Blaisdell, M. D. Lecturer on Anatomy.
- 1879 Domingo M. Sabater, D. D. S., M. D. Lecturer on Dental  
12 Surgery, 107 E. 30 st.  
Occupied various positions in New York College of Dentistry  
since first election as demonstrator in the Infirmary.
- 1886 John I. Hart, D. D. S. Lecturer on Physiology, 47 W.  
2 56 st.  
D. D. S. New York College of Dentistry 1886; Demonstrator of  
operative dentistry 1886-9; Member Dental Society of the  
State of New York.
- 1886 Martin C. Gottschaldt, D. D. S., M. D. Lecturer on  
Chemistry.
- 1890 Thomas W. Onderdonk, D. D. S. Lecturer on Mechanical  
Dentistry.

## DEMONSTRATORS IN INFIRMARY DEPARTMENT

- 1888 Francis A. Chicherio, D. D. S. Senior Demonstrator,  
3 Operative Department, 2852 Atlantic av., Brooklyn.  
D. D. S. New York College of Dentistry.
- 1888 Charles F. Weber, D. D. S. Demonstrator of Operative  
2 Dentistry, 16 Bayard st.  
D. D. S. New York College of Dentistry 1888.
- 1890 William R. Dunster, D. D. S., M. D.  
D. D. S. New York College of Dentistry 1890; M. D. University  
of the City of New York 1890.
- 1889 George A. Hull, D. D. S., M. D., 210 W. 11 st.  
2 D. D. S. New York College of Dentistry 1890; M. D. New York  
Homœopathic Medical College 1890.
- Alfredo Duran, D. D. S.  
D. D. S. New York College of Dentistry 1890.
- Charles L. Berger, D. D. S.  
Michael Moskovich, D. D. S.
- 1888 Victor C. Bell, D. D. S. Demonstrator.  
5 B. A. Gymnasium of Odesa 1880; D. D. S. New York College of  
Dentistry; Surgeon, German Polyclinic; Teacher of lan-  
guage, Evening public schools.
- 1889 Frank A. Katzmeier, D. D. S. Demonstrator, 1004  
2 Third av.  
Cyrus A. Jordan, jr, D. D. S.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Manly C. Burns.....Canada

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Gold medal for best examinations, Otto Mattes, Germany...	\$100
Silver medal, Frank E. Weber, New York.....	5
Bronze medal for best report of oral surgery clinics, Alfred Bartels, New York.....	1

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

## ORAL EXAMINATIONS

Beginning 1890-91, an addition to the curriculum will be made, in that each professor will meet the class one hour each week for an oral examination on the current lectures of his department. Creditable standing in these examinations will give a student two points in each department on his graduation examination, and 20 points in each department on his junior examination.

## ANATOMY

The lectures on anatomy embrace all the regions of the body — special attention is given to the region of the face ; all the lectures are fully illustrated.

## COURSE OF DEMONSTRATIONS OF ANATOMY

During the past regular session an addition was made to the curriculum, viz. : that of demonstrations of anatomy by specially prepared colored lantern illustrations of the anatomy of the entire body, which were exhibited by the oxy-hydrogen light. This course consists of 20 demonstrations, and the success attending them was such as to warrant their continuance. During the session of 1890-91 the students will be examined on these demonstrations at the weekly oral examination in anatomy.

## PATHOLOGY AND ORAL SURGERY

The lectures on pathology and oral surgery consider :

- 1 Pathology applied to the understanding of the processes of disease and repair that may involve the walls of the buccal cavity ;
- 2 Description of the injuries and diseases of the wall of the buccal cavity ;
- 3 The surgical and medical treatment of the same.

## DENTAL SURGERY

The object is to give the student a thorough practical knowledge of all operations on the natural teeth.

The course commences with demonstrations of the manufacture of instruments, and a careful explanation of their uses.

All materials used for filling teeth are considered, and the methods for introducing the same are explained.

All diseases of the teeth and all diseases of the buccal cavity incidental to diseases of the teeth are described, and their treatment considered at length.

## THERAPEUTICS

The lectures comprise a comprehensive classification of all medicines used in dental surgery, with a careful and thorough explanation of their uses and therapeutic effects, whether applied locally or otherwise.

## VISCERAL ANATOMY AND PHYSIOLOGY

The anatomy of the viscera of the body is described and demonstrated by recent specimens and plates.

Physiology is comprehensively treated, and many of the functions of the organism elucidated by experiments.

## HISTOLOGY

The histology of the various tissues of the body is described and exhibited. Special attention is given to the structure and development of the teeth.

## PRACTICAL HISTOLOGY

Those who desire to learn how to work with the microscope and to section and mount the various tissues can do so by entering a special class therefor.



## CHEMISTRY

The course of lectures comprehends the most important points in physics, chemistry and metallurgy, with their practical application to operative and mechanical dentistry. Experiments, apparatus, etc. are made use of to illustrate the subject.

## PRACTICAL CHEMISTRY

Those who desire a practical insight into the subject of chemistry can obtain the same by entering a special class therefor.

## MECHANICAL DENTISTRY

The instruction includes a consideration of the principles that lie at the foundation of this branch of dental surgery, and the various methods of carrying into practical effect those principles. The construction of sets of teeth on gold, silver, platinum (continuous gum), rubber, celluloid and the regulation of teeth, are made subjects of lectures, experiments, etc.

## SPECIAL COURSES OF LECTURES

In these lectures each lecturer during the regular session develops some special and important practical subject. One hour a week is devoted to these lectures, and each lecturer gives four lectures.

## DENTAL CLINICS

Operative and mechanical dentistry clinics at the chair and in the laboratory are given during the regular session by the clinical staff. At each clinic several operators are present, affording better opportunities for students to see and profit by the operations.

## ORAL SURGERY CLINICS

A clinic on oral surgery is given each week during the collegiate session, where surgical cases of interest to the dental surgeon are presented. Patients presenting themselves at the clinics who require surgical operations are admitted into Roosevelt Hospital. The students of the college are admitted to the hospital to witness the performance of these operations.

## REQUIREMENTS FOR GRADUATION

The candidate for graduation must have complied with the following requisites:

- 1 Must be 21 years of age and of good moral character.
- 2 Shall have spent two full years with a preceptor in the study and practice of dentistry (attendance on two infirmary courses is

considered equivalent to a private preceptorship) inclusive of attendance on two regular sessions of lectures in a recognized dental college, the last of which shall have been in this institution.

3 Must deposit a specimen of mechanical dentistry in the museum of the college, made by himself in the institution.

4 Must have attended the course of demonstrations of anatomy in each year of his college attendance.

5 Must have attended the course of oral examinations of each year of his college attendance.

6 Must satisfactorily pass a written and an oral examination by the faculty, and practical examinations before the professors of dental surgery and mechanical dentistry.

A graduate of medicine is accredited one year of study, inclusive of one course of lectures.

The New York College of Dentistry is empowered by its charter to confer two degrees — D. D. S. and F. C. D. (Fellow of the College of Dentistry).

The degree of F. C. D. is honorary, conferred only "on such persons as have made, or shall have made, valuable contributions to the science of dentistry."

The diplomas bear in addition to the signatures of the faculty and officers of the trustees, those of the Chancellor and Secretary of the University of the State of New York.

During past year diplomas conferring the degree of D. D. S. were awarded :

De Lancey Bradner Armstrong	Arthur Eugene Davenport
George William Baab	Alfred Williston Davisson
Edward Howard Babcock	Myron James Dixon
Charles Edwin Baldwin	William Henry Draper
Louis Clarence Baldwin	William Romanoff Dunster
Alfred Bartels	Alfredo Duran
Edwin Betts	Edward Eberle
Joseph Robert Bomann	James Samuel Eckley
Francisco Genaro Bruno	Frank Wroe Eichhorn
Manly Collard Burns	Lewis Everett Estler
William Green Clark	George Henry Euler
Frank Titsworth Clawson	Frederick Ernest Adolph Faber
James Dawson Cook	Ossian Lucerne Field
Homer Cecil Croscup	Charles Andrew Fones
Wilber Manton Dailey	George Alfred Fournier

Andrew Graham	Nelson Mangam Pattison
Francis Gray	George Bender Poole
Ferdinand Walter Griebel	Ellis Frank Potter, B. S.
Ellis Allan Grossman	Louis Simon Rosentiel, jr
José Guillermo Gutierrez	William Arja Rowlands
George Alfred Hull	Frank Aloysius Ryan
Chester Thomas Hustis	Paul Schoenemann
Thaddeus Pomeroy Hyatt	William John Schreiber
John Julien	Harry Johnson Sinclair
Harry Colby Kahlo	Arthur Hamilton Smith
Louis Wixon Kennard	Walter Clinton Spooner
Charles Brodhead Kenney	Henry Augustin Sprang
Roswell De Lancey King	Thomas Andrew Sproat
Hubert Aria Lewis	Julius Joseph Stier
Charles Carroll Linton, B. A.	Frank Russell Stillman
James Buckley Locherty	William Augustus Strong
Oscar Benjamin Lopez	William Polly Sullivan
Charles Fredrik Josef Lundgren	Henry Paul Travers
William John Macom	John William Van Doorn
Fred. Harry Martin	Frank Seymour Van Nostrand
Otto Mattes	Horace Nevertton Warren
William Hopkins Merritt	Frank Edmund Weber
Ferdinand Miller	William Leslie Weed
Edward O'Neill	John Raymond Westervelt
Stephen Palmer	Julius Zietz

### BUILDINGS

Two floors of a three story brick building are occupied for class rooms, floor area 8,000 sq. ft., two class rooms, 250 seats, rent, \$2,000.

# ECLECTIC MEDICAL COLLEGE OF THE CITY OF NEW YORK

239 E. 14 st., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
22 Ap	1865	Legislature created the corporation.
19 D	1865	College organized.

## TRUSTEES

President, Samuel Sinclair

Vice-President, Hon. Chauncey Shaffer

Treasurer, Thomas N. Rooker . . . . . Tribune building

Secretary, Frederick R. Lee, LL. B. . . . . 119 Nassau st.

George W. Boskowitz, M. D. . . . . 40 E. 41 st.

Camden C. Dike

Alfred R. Hinds

Attila J. Kelemen

Albert W. W. Miller

Robert S. Newton

James Rascovar

Hon. W. F. Templeton

## VACANCIES

Hon. Daniel S. McElroy

## ADMINISTRATION

Figures in column at left give first year of service in Eclectic Medical College.

1880 Dean, George W. Boskowitz, M. D. 40 E. 41 st.

M. D. Eclectic Medical College of the City of New York 1877;  
Member National Eclectic Medical Association, Eclectic  
Medical Society of the State of New York; Honorary mem-  
ber Vermont Eclectic Medical Association; Editor Eclectic  
review.

Treasurer, Thomas N. Rooker, Tribune building.

1884 Secretary, Ovid A. Hyde, M. D. 127 E. 93 st.

M. D. Eclectic Medical College of the City of New York 1884;  
Member Eclectic Medical Society of the State of New York,  
National Eclectic Medical Association; Associate editor  
Eclectic review.



1885 Registrar, John A. Beuermann, M. D. 239 E. 14 st.

M. D. Eclectic Medical College of the City of New York 1884; Demonstrator of anatomy 1885-6; Director of chemical laboratory 1888-; Lecturer on histology and pathology 1889-; Member National Eclectic Medical Association, Eclectic Medical Society of the State of New York; President International Association, Stolze Stenographers; Associate editor Eclectic review.

## INSTRUCTION

Figures in column at left give first year of service in Eclectic Medical College and years spent in teaching.

August F. Frech, M. A., M. D. Emeritus Professor of Diseases of Women.

1880 George W. Boskowitz, M. D. Dean and Professor of  
11 Surgery, 40 E. 41 st.

See also "Administration."

1881 Henry Armgardt, M. D. Professor of Materia Medica and  
10 Therapeutics, 317 Leonard st., Brooklyn.

M. D. Eclectic Medical College of the City of New York 1879; Member Eclectic Medical Society of the State of New York.

Frederick R. Lee, LL. B. Professor of Medical Jurisprudence.

1884 Ovid Allen Hyde, M. D. Secretary and Professor of Descrip-  
7 tive and Surgical Anatomy, 127 E. 93 st.

See also "Administration."

1882 William Richardson, Ph. D. Professor of Chemistry and  
9 Toxicology, 348 Second av.

Ph. D. Waynesburg College (Pennsylvania) 1887; Director of laboratory, Cooper Union 1884-; Chemist, Fulton Municipal Gas Light Company.

1882 Byron Clark, M. A., M. D. Professor of Theory and Practice  
8 of Medicine and Lecturer on Nervous Diseases and Insanity,  
"The Byron," 107 W. 98 st.

M. A. Waynesburg College (Pennsylvania) 1885; M. D. University of Maryland, and College of Physicians and Surgeons (Maryland) 1881, Eclectic Medical College of the City of New York; Student Johns Hopkins 1880-1; Member National Eclectic Medical Association.

George W. Thompson, M. D. Professor of Physiology and Pathology.

1885 Charles W. Parker, M. D. Lecturer on Diseases of the Eye  
6 and Ear, 117 Groton av., Cortland.

M. D. Eclectic Medical College of the City of New York; Mem-  
ber New York State Eclectic Medical Society, National  
Eclectic Medical Association.

1886 H. E. Waite, M. D. Lecturer on Electro-therapeutics.

5 M. D. Eclectic Medical College of the City of New York 1885.

1889 J. W. Fyfe, M. D. Lecturer on Specific Medicine, Sanga-  
3 tuck, Ct.

M. D. Eclectic Medical College of the City New York 1888.

Harriet C. Hinds, M. D. Lecturer on Diseases of Children.

W. H. Harrison, M. D. Lecturer on Diseases of Women.

Charles Trevisanello, M. D. Assistant in Chemistry.

1881 Max Augsburg, M. D. Professor of Obstetrics, 669 Ninth  
9 av.

M. D. Eclectic Medical College of the City of New York 1880.

1885 John A. Beuermann, M. D. Lecturer on Histology and  
10 Pathology, 239 E. 14 st.

See also "Administration."

James W. Rock, M. D. Lecturer on Skin and Venereal  
Diseases.

Deville N. Bulson, M. D. Instructor in Physiology.

1887 George O. Heffter, Ph. G., M. D. Lecturer on Pharmacy,  
4 403 Pleasant av.

Ph. G. New York College of Pharmacy 1882; M. D. New York  
Eclectic Medical College 1886.

1890 J. Howard Yarnall, M. D. Lecturer on Minor Surgery, 1011  
10 Park av.

1887 E. M. Manwaren, M. D. Lecturer on Hygiene, 59 W. Bridge  
3 st., Oswego.

Member New York State Eclectic Medical Society, National  
Eclectic Medical Association.

1889 Homer L. Clark, M. A., M. D. Lecturer on Physical  
2 Diagnosis, 107 W. 98 st.

B. A. Waynesburg College (Pa.) 1882, M. A. 1885; M. D. University  
of Maryland 1885.

William J. Krausi, M. D. Demonstrator of Anatomy.

## VACANCIES

W. O. Bailey, M. D. Professor of obstetrics. Resigned  
2 Je 1890.

## APPOINTED DURING YEAR

Max Augsburger, M. D. Professor of obstetrics.

W. H. Harrison, M. D. Lecturer on diseases of women.

W. J. Krausi, M. D. Demonstrator of anatomy.

J. Howard Yarnall, M. D. Lecturer on minor surgery.

## PROMOTIONS

August F. Frech, M. D. Emeritus professor of diseases of women from professor of the same.

John A. Beuermann, M. D. Lecturer on histology and pathology, from (not reported).

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Ward Allen Minor, M. D.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

(None)

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course of study includes the following subjects : anatomy, surgery, theory and practice of medicine, materia medica, botany, chemistry, obstetrics, diseases of children, physiology, diseases of women, medical jurisprudence, diseases of the mind and nervous system, electro-therapeutics, diseases of the eye and ear, histology and pathology, dermatology.

## REQUIREMENTS FOR GRADUATION

The requirements for graduates are that each candidate be at least 21 years of age, have studied medicine for four years under the supervision of a reputable physician, and have attended not less than three full terms of instruction in an incorporated medical college, the last of which shall be in this college.

Candidates must also present a thesis of their own production on some medical subject.

## BUILDINGS

Main building, five story stone, floor area 7,500 sq. ft., five class rooms, 300 seats, value \$5,000.

## ADDITIONAL INFORMATION

The college educates about 20 students at considerably reduced fees or gratuitously.

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# SYRACUSE UNIVERSITY

## COLLEGE OF MEDICINE

*Syracuse*

For historic sketch and trustees see Syracuse University, pp. 1002-1003.

## ADMINISTRATION

Figures in column at left give first year of service in Syracuse College of Medicine.

Chancellor, Rev. Charles N. Sims, D. D., LL. D. 900 University av.

See also Syracuse University.

1872 Dean, Henry D. Didama, M. D., LL. D. 424 S. Salina st.

M. D. Albany Medical College 1846; LL. D. Syracuse University 1889; Professor of principles and practice of medicine, Syracuse University College of Medicine 1873- , Dean 1889- ; Chief Medical and Surgical staff, St Joseph's Hospital; Member New York State Medical Society, New York State Medical Association, American Medical Association, American Academy of Medicine, British Medical Association.

1880 Treasurer of faculty, A. Clifford Mercer, M. D. 324 Montgomery st.

Instructor in histology and curator, Syracuse College of Medicine 1880-2, Lecturer on microscopy and histology and curator 1882-4, Lecturer on pathological histology and curator 1884-6, Professor of pathology 1886- ; Fellow Royal Microscopical Society, London; Member medical staff, House of Good Shepherd Hospital; Member Medical and Surgical staff, Syracuse Free Dispensary.

1882 Registrar, William H. Dunlap, M. D. 408 E. Genesee st.

B. S. Syracuse University 1875, M. D. 1878; Fellow American Academy of Medicine.



## INSTRUCTION

Figures in column at left give first year of service in Syracuse College of Medicine and years spent in teaching.

- 1872 Nelson Nivison, M. D. Emeritus Professor of Physiology  
24 and Hygiene.

M. D. Geneva Medical College 1856, Medical Department, University of the City of New York 1859; Professor of physiology and pathology, Geneva Medical College 1861-72; Professor of physiology, pathology and hygiene, Syracuse University, College of Medicine 1872-85; Member New York State Medical Society, American Medical Association.

- 1872 Henry D. Didama, M. D., LL. D. Dean and Professor of  
19 Science and Art of Medicine and Clinical Medicine, 424  
S. Salina st.

See also "Administration."

- William T. Plant, M. D. Professor of Pediatrics, 224 Har-  
rison st.

Physician, House of Good Shepherd, Member of consulting  
staff, Dispensary.

- 1872 Alfred Mercer, M. D. Professor of State Medicine, 324  
18 Montgomery st.

M. D. Geneva Medical College 1845; Professor of minor and  
clinical surgery, Syracuse University College of Medicine  
1872-85; Professor of state medicine 1885-; Member surgical  
staff, Good Shepherd Hospital; Member American Medical  
Association, British Medical Association, Medical Society of  
the State of New York.

- 1876 William Manlius Smith, M. A., M. D. Professor of Chem-  
14 istry, 138 Holland st.

B. A. Yale 1844, M. A. 1848; M. D. University of Pennsylvania  
1849; Professor of materia medica, Syracuse University  
College of Medicine 1877; Professor of chemistry and botany  
1878-90; Member Medical Society of the State of New York.

- 1872 John Van Duyn, M. D. Professor of Surgery, 427 S.  
18 Salina st.

Surgeon, House of Good Shepherd and Dispensary; M. D.  
Kentucky School of Medicine.

- 1880 Gaylord P. Clark, M. D. Professor of Anatomy, 452  
11 S. Salina st.

B. A. Williams 1877, M. A. 1880; M. D. Syracuse University  
College of Medicine 1880.

- 1882 William H. Dunlap, M. D. Professor of Dermatology.  
6 See also "Administration."
- 1882 John L. Heffron, M. A., M. D. Professor of Materia  
8 Medica and Therapeutics, 910 N. Salina st.  
B. A. Madison University 1873, M. A. 1876; M. D. Syracuse University College of Medicine 1881; Teacher of sciences, Newark High School 1873-78; Instructor in histology, Syracuse University College of Medicine 1882-84; Member New York State Medical Society, American Academy of Medicine.
- 1885 Henry B. Allen, M. D. Professor of Obstetrics, Bald-  
5 winsville.  
M. D. Bellevue Hospital Medical College.
- 1880 A. Clifford Mercer, M. D. Professor of Pathology, 324  
11 Montgomery st.  
See also "Administration."
- 1883 Henry L. Elsner, M. D. Professor of Clinical Medicine,  
7 516 Prospect av.  
M. D. College of Physicians and Surgeons 1877; Instructor in medicine, Syracuse University College of Medicine 1883-85; Lecturer on Medicine 1885-88.
- 1876 David M. Totman, M. D. Professor of Clinical Surgery, 303  
15 Montgomery st.  
B. A. Yale 1872; M. D. Syracuse University College of Medicine 1876; Instructor in physiology 1876-83, Lecturer in physiology 1883-86, Professor of clinical surgery 1886-; Member New York State Medical Society.
- 1887 Frank W. Marlow, M. R. C. S., L. S. A., M. D. Professor of  
3 Ophthalmology and Otology, 401 Montgomery st.  
M. R. C. S. 1880; L. S. A. London 1880; M. D. Syracuse College of Medicine 1885; Consecutively house surgeon, house physician and ophthalmic assistant, St Thomas' Hospital, London 1881-84; Clinical assistant, Royal London Ophthalmic Hospital, London 1883-84; Member Ophthalmic Society, United Kingdom Great Britain and Ireland, New York State Medical Society.
- 1885 Nathan Jacobson, M. D. Professor of Laryngology and  
5 Clinical Surgery, 430 S. Salina st.  
M. D. Syracuse University College of Medicine 1877; Surgeon, St Joseph's Hospital, Syracuse; Member New York State Medical Association, New York State Medical Society, American Medical Association; Surgeon, St Joseph's Hospital; Author of numerous articles in medical journals.

1884 Aaron B. Miller, M. D. Professor of Gynecology.

- 6 M. D. University of Maryland 1882; Instructor in gynecology, Syracuse University College of Medicine 1884-87; Lecturer on gynecology, 1887-90; Gynecologist, St Joseph's Hospital, House of Good Shepherd, Syracuse; Fellow American Association of Obstetricians and Gynecologists.

1883 Martin A. Knapp, B. A. Lecturer on Forensic Medicine,  
7 741 James st.

1888 J. C. Carson, M. D. Lecturer on Mental Diseases.

- 2 Medical superintendent, New York Institute for Deaf and Dumb 1883-84; Medical superintendent, Syracuse State Institution for Feeble-Minded Children 1884- .

1884 Scott Owen, M. D. Lecturer on Anatomy, 233 Mont-  
6 gomery st.

Surgeon, St Joseph's Hospital.

1885 Reuben C. Hanchett, M. D. Lecturer on Materia Medica,  
5 3 Joy building.

M. D. Syracuse University College of Medicine 1884.

1886 Fred. W. Sears, M. D. Lecturer on Histology and Surgeon  
4 to Dispensary, 326 Montgomery st.

M. D. Syracuse College of Medicine 1886; Pathologist, St Joseph's Hospital; Member New York State Medical Association.

1890 Lucien M. Underwood, Ph. D. Lecturer on Physiology, 411  
14 Comstock av.

Ph. B. Syracuse University 1877, Ph. M. 1878, Ph. D. 1879; Professor of natural science, Hedding College 1879-80; Professor of natural science, Illinois Wesleyan University 1880-83; Professor of geology, zoology and botany, Syracuse University 1883- ; Fellow American Association for the Advancement of Science; Author Our native ferns and their allies, Descriptive catalog of the Hepaticae of North America, north of Mexico, 1884, Hepaticae Americanae, 1888, Hepaticae of North America (Gray's Manual of botany), 1890, Century of illustrative fungi, 1889.

1887 Henry H. Pease, B. A., M. D. Demonstrator in Anatomy,  
3 318 Montgomery st.

B. A. Syracuse University 1883, M. D. 1886; Member medical staff, St Joseph's Hospital, Syracuse Free Dispensary.

1888 Frank B. Brooks, M. D. Instructor in Physiology, 602  
3 Lodi st.

M. D. Syracuse University College of Medicine 1881.

1889 William A. Curtin, M. D. Instructor in Physiology, 301  
1 E. Fayette st.

M. D. Syracuse University College of Medicine 1887.

1889 George M. Price, M. D. Assistant Demonstrator in Anatomy,  
1 322 E. Fayette st.

M. D. Syracuse College of Medicine 1886.

#### VACANCIES

Arthur B. Bruse, M. D. Lecturer on histology. Resigned 9  
Je 1890.

Horace D. Babcock, M. D. Lecturer on physiology. Resigned  
9 Je 1890.

#### APPOINTED DURING YEAR

Lucien M. Underwood, Ph. D. Lecturer on physiology, Je 1890.

#### PROMOTIONS

Nathan Jacobson, M. D. Professor of laryngology and clinical  
surgery from lecturer on the same.

Aaron B. Miller, M. D. Professor of gynecology from lecturer  
on the same.

Scott Owen, M. D. Lecturer on anatomy from instructor in the  
same.

Reuben B. Hanchett, M. D. Lecturer on materia medica from  
instructor in same.

Fred W. Sears, M. D. Lecturer on histology from instructor in  
same.

#### HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

First faculty prize, William A. Strohmenger.

Second faculty prize, John C. Shoudy.

#### REQUIREMENTS FOR ADMISSION

See table 3.



## COURSES OF STUDY

## ANATOMY

This branch is taught didactically and by practical exercises. The lectures are illustrated by specimens from the museum, by fresh preparations made expressly for the class, thus drilling the mind and eye of the student. The quizzes which supplement and fix the work of the class-room are reinforced by work in dissection. The first two years are devoted to this subject, and during this period not only are the bones, muscles, vascular and nervous systems studied, but regional anatomy is taken up.

Since the passage of the law requiring all unclaimed bodies to be delivered to medical institutions, we have been enabled to secure an abundance of anatomical material; so that now we can offer better advantage than ever before in this direction.

## PHYSIOLOGY

This branch is taught by means of recitations and lectures illustrated by charts, microscopical and anatomical preparations, and frequent demonstrations on lower animals. The first year is devoted to nutrition and allied subjects, while the second year is given up to the nervous system, the special senses and reproduction. Almost no time is given to theories, but physiological facts are carefully studied and actual functions demonstrated when possible.

## CHEMISTRY

The chemical course is eminently practical and a large portion of the student's time during the first year is devoted to laboratory work. The instruction includes the general principles of the subject, special stress, however, being laid on physiological chemistry. The resources of the laboratory are such that the student can make himself thoroughly familiar with all the methods of chemical manipulation by personal experiment. Medical chemistry and toxicology are taken up in the second year, and the subjects of urinary analysis, with detection of poisons, are thoroughly treated.

## SCIENCE AND ART OF MEDICINE

Each week, five didactic or clinical lectures are given, and in accordance with the practice in every other department, an entire hour is devoted to a careful oral or written examination.

Diagnosis is not confined to a dry enumeration of unexplained symptoms ; but as far as practicable, the *rationale* of all signs and symptoms is given and the relation of each to the morbid anatomy. When to give active treatment, when to watch and wait, and why each individual drug in the prescription is selected are carefully pointed out and explained.

Abundant clinical material is furnished by the hospitals and free dispensary of the city, where senior students make differential diagnoses and prescriptions in the presence of the class and under the supervision of the professors.

#### SURGERY

The instruction in this department is very largely clinical ; though theory is by no means neglected. The manufacturing interests of Syracuse and the numerous railroads centering there give a large field for surgical work, and enable the student to see and assist in all forms of operations. Minor surgery also receives due attention ; and the application of bandages and various forms of surgical dressings are practically illustrated.

#### MATERIA MEDICA AND THERAPEUTICS

Lectures and recitations are held which are illustrated by the various plants and medicinal substances of the pharmacopœia provided by the museum.

Therapeutics is not only theoretically taught from the standpoint of the physiological action of drugs, but as far as possible the student is afforded an opportunity of observing and noticing the action of the various remedies in the clinics of the hospital and dispensary.

#### HISTOLOGY

The histological laboratory is equipped with all the apparatus for a thorough course on this subject. The instruction is given in the laboratory. It consists of lectures on and demonstrations of the construction and uses of the microscope ; instruction as to the best methods of preparing tissues for microscopical study, how to stain and permanently mount specimens and section cutting. These lectures are illustrated by plates, charts and sections, which are mounted during the lecture. These sections are demonstrated to each student individually by the instructor.

## PATHOLOGY

This is taught by recitations and laboratory work. The pathological museum, formerly in the Geneva College of Medicine, has been transferred to the medical department of Syracuse University, where, with the additions that are from time to time being made to it, it serves as an important means of instruction.

## OPHTHALMOLOGY AND OTOTOLOGY

The course of instruction in ophthalmology and otology consists of didactic and clinical lectures and recitations, occupying one hour or more weekly during the whole medical year. Members of the class will be required to examine and diagnose the cases.

Special attention will be drawn to those classes of cases which are more apt to come under the care of the general practitioner, and which can be efficiently treated by him.

## LARYNGOLOGY AND DERMATOLOGY

Clinical instruction in diseases of the throat and nose is included in the regular course of study. Each student is thoroughly drilled in the use of the laryngoscope, and abundant material is furnished the class for examination and treatment.

There are two exercises weekly during the year for the third class in diseases of the skin, combining clinical and theoretical instruction. Particular stress is laid upon diagnosis and treatment in the clinics.

## CLINICAL INSTRUCTION

The facilities for clinical study here afforded are unsurpassed except by the great medical centers of the country. St Joseph's Hospital containing 103 beds, and the House of the Good Shepherd with 45 beds, constantly furnish abundant material for the medical and surgical clinics. At those hospitals the student can see most of the major and all of the minor surgical operations performed according to the most approved methods. The medical cases are carefully described and explained in the wards, and an opportunity given all members of the class to examine and study the cases personally.

The new Maternity Hospital and the Onondaga County Orphan Asylum also give students opportunities for studying diseases of women and children.



## SYNOPSIS OF STUDIES

*First year* — Anatomy, physiology, chemistry, histology, botany and applied anatomy.

*Second year* — Anatomy, physiology, medical chemistry, materia medica, surgery, practice and clinics.

*Third year* — Therapeutics, practice, surgery, obstetrics, pediatrics, pathology, gynecology, forensic and state medicine, ophthalmology, dermatology and clinics.

All first year students receive practical instruction in chemistry through a course of laboratory work extending through both terms. Students of the second year take a shorter course in purely medical chemistry.

Laboratories have also been established for practical work in histology and comparative and human anatomy, and it is designed to enlarge and thoroughly equip the physiological laboratory in the coming summer.

## REQUIREMENTS FOR GRADUATION

To receive the degree of M. D. the student must have attained his majority; he must be of good reputation; at least the last of three full years of medical study must have been spent here; and he must pass the regular examinations of the first, second and third years. Official certificates of proficiency from schools with courses similar in plan and equal in extent with this will be accepted in lieu of examination.

## BUILDINGS

Main building, three story brick, three class rooms, value \$3,000. Class room building, two and one half story brick, two class rooms, value \$3,500. Museum included in main building, library in class room building. Dissecting room and chemical laboratory, two story brick, two class rooms, value \$1,500.

## ADDITIONAL INFORMATION

During the past year the physiological department has been re-equipped, a convenient and well lighted lecture room added, together with desk room for laboratory work. A large amount of



modern apparatus has also been purchased. In the anatomical department tanks for conserving material and better facilities for transporting and preserving parts being dissected have been provided. A reading and study room has also been fitted up where students may wait during unoccupied hours.

## AMERICAN VETERINARY COLLEGE

139 W. 54 st., New York

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

29 Ap 1875 Incorporated under general laws of State of New York.

29 My 1888 Reorganized and reincorporated by legislature; power given to confer degree D. V. S.

### TRUSTEES

President, Faneuil D. Weisse, M. D. ....	46 W. 20 st.
Treasurer, H. A. Weeks .....	102 W. 73 st.
Secretary, W. J. Coates, M. D., D. V. S. ....	141 W. 54 st.
Alexander F. Liautard, M. D., V. M., ex-officio ...	141 W. 54 st.
E. S. Bates, M. D. ....	New York
Hamilton Busbey .....	"
Hon. James W. Husted .....	Peekskill
Samuel Marsh .....	New York
W. E. B. Miller, D. V. S. ....	Camden, N. J.
George A. Peters, M. D. ....	New York
F. LeRoy Satterlee, M. D. ....	"
George B. Satterlee .....	"
James Stillman .....	"
Daniel M. Stimson, M. D. ....	"
F. F. Van Derveer .....	"
S. B. Ward, M. D. ....	Albany

## ADMINISTRATION

Figures in column at left give first year of service in American Veterinary College.

1875 President and Dean, Alexander F. Liautard, M. D., V. M.,  
141 W. 54 st.

V. M. Alfort 1855; M. D. University of the City of New York 1865; Professor of anatomy and operative surgery, New York College of Veterinary Surgeons 1864-75; Corresponding member Société Centrale de Médecine Vétérinaire; Honorary member Veterinary Society of Alsace-Lorraine; Fellow Royal College Veterinary Surgeons; Member U. S. Veterinary Medical Association; Author Hydrophobia, Vademecum of equine anatomy, Treatise on age of domestic animals, Castration on domestic animals, Lameness in the horse; Translation of Zundel's diseases of the horse's foot; Editor American veterinary review.

Treasurer, H. A. Weeks, 102 W. 73 st.

## INSTRUCTION

Figures in column at left give first year of service in American Veterinary College and years spent in teaching.

1875 Alexander F. Liautard, M. D., V. M. Professor of Anatomy and Operative Surgery, 141 W. 54 st.

See also "Administration."

Alexander W. Stein, M. D. Professor of Physiology and Histology.

See also New York College of Dentistry.

1875 James L. Robertson, M. D., V. S. Professor of Theory and Practice and Clinical Medicine, 409 Ninth av.

V. S. American Veterinary College 1865; M. D. University of the City of New York 1867.

Charles A. Doremus, M. D., Ph. D. Professor of Chemistry.

3 Roscoe R. Bell, D. V. S. Professor of Materia Medica and Therapeutics.

D. V. S. American Veterinary College.

3 James E. Ryder, D. V. S. Professor of Obstetrics and Canine Pathology.

D. V. S. American Veterinary College.

1890 E. F. Brush, M. D. Professor of Bovine Pathology, Mt  
3 Vernon, Westchester county.

M. D. Bellevue Hospital Medical College 1875; Attending physician, New York Infant Asylum 1881-82; Consulting physician on diseases of children, Mt Sinai Hospital 1875; Member New York State Medical Association.

1877 William J. Coates, M. D., D. V. S. Adjunct Professor of  
Operative Surgery and Physical Diagnosis, 110 W. 130 st.

D. V. S. American Veterinary College 1877; M. D. University of the City of New York 1882; Demonstrator of anatomy, American Veterinary College 1877-82, Assistant surgeon, hospital department 1877- , Lecturer on histology 1879- , Adjunct to the chair of physiology 1885-89; Adjunct professor of surgery 1887- ; Clinical lecturer 1886- ; Member New York State Veterinary Society, U. S. Veterinary Medical Association.

J. A. Leighton, D. V. S. Lecturer on Horse Shoeing and Diseases of the Foot.

W. S. Gottheil, M. D. Professor of Surgical Pathology and Practical Microscopy.

A. J. Dodin, D. V. S. Adjunct to the Chair of Chemistry, Instructor in Chemical Analysis.

J. Huelsen, jr, D. V. S. Teacher on Practical Veterinary Pharmacy.

Rush Shippen Huidekoper, M. D., Veterinarian. Professor of Sanitary Medicine and Veterinary Jurisprudence, 1690 Broadway.

M. D. University of Pennsylvania 1877; Veterinarian, Alfort, Department of Agriculture, France 1882; Assistant demonstrator of surgery, University of Pennsylvania 1878-80; President U. S. Veterinary Medical Association.

H. H. Rusby, M. D. Professor of Botany.

Paul Gibier, M. D. Director of the Biological Laboratory.

A. H. Helme, D. V. S. Curator of the Museum.

#### VACANCIES

O. D. Pomeroy, M. D. Professor of ophthalmology. Resigned.

#### APPOINTED DURING YEAR

Paul Gibier, M. D., Director of the biological laboratory.

Rush Shippen Huidekoper, M. D., Professor of sanitary medicine and veterinary jurisprudence.

## PROMOTIONS

## In title alone

J. E. Ryder, D. V. S. Professor of obstetrics, from lecturer on the same.

R. R. Bell, D. V. S. Professor of materia medica and therapeutics, from lecturer on the same.

E. T. Brush, M. D. Professor of bovine pathology, from lecturer on the same.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, William Elsworth Groff. . . . . Massillon, Ohio

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Gold medal presented by trustees for best general examination, Richard Middleton, B. A., D. V. S., Philadelphia . . . . .	\$25 00
Gold medal presented by faculty for best practical examination, Edward John Creely, D. V. S., San Francisco . . . . .	25 00
Alumni Association prize (standard works on veterinary medicine) for second best general examination, Albert Fay Becker, D. V. S., Hemlock lake . . . . .	20 00
Professor Liautard prize (a case of instruments) for best dried and mounted preparation, illustrating descriptive or surgical anatomy, presented by a student from graduating class, Edward Francis Coyle, D. V. S., New York . . . . .	37 50
Silver medal presented by Professor Liautard for best examination in junior class, Edgar N. Stout . . . . .	5 00
Professor Coates, as president of College Association, prize for best paper presented and discussed before the association, Joseph Dodge Burtis, D. V. S., Jamaica. . .	10 00

## REQUIREMENTS FOR ADMISSION

See table 3.



## COURSES OF STUDY

The curriculum comprises the fundamental medical sciences and the special branches pertaining to veterinary medicine.

Students are instructed by didactic lectures, recitations and class demonstrations, as well as by clinics and laboratory exercises.

During the sessions a series of daily examinations are also carried on by a corps of instructors, graduates of veterinary medicine—appointed by the professors of the various departments.

## DESCRIPTIVE AND SURGICAL ANATOMY

In this department the instruction is divided between two sessions. In the first session, the junior is made acquainted with the anatomy of locomotion of the horse—which is taken as type—and the organs of respiration and digestion, also the same apparatuses in the other domestic animals, thus preparing for the second session, when his attention will be given to the blood vessels, nerves and other organs. The lectures are illustrated by fresh dissections, dry natural preparations, Auzoux anatomical models, plates and the hand drawings on the blackboard.

There are two dissecting rooms, one for each class. These are open daily, except Sundays, and abundant material for dissection is always to be obtained free of charge.

The professor or one of the demonstrators will be in attendance to superintend and instruct the students in their practical work. Each student is expected to make two entire dissections, one in each session, before admission to graduation.

## PHYSIOLOGY

This department embraces the principles of physiology and the various functions of the body as they are performed during health. While physiological knowledge and its principles are similar in all classes of animals, generally speaking, direct attention is given to those functions which are special to the several domestic animals.

## CHEMISTRY

This department embraces both organic and inorganic chemistry, being completed, so to speak, by the branches of physics which bear upon the subject and are connected with it. All the lectures are abundantly illustrated by the necessary apparatuses and experiments.

## THEORY AND PRACTICE

This department is taught by didactic and clinical lectures and by examinations of the patients in the hospital, the latter the greatest advantage to the student in facilitating his appreciation of equine, bovine and canine diseases. A reference to the report of the hospital department of the college will give an idea of the opportunities that this department has of being made as complete as can be desired.

## MATERIA MEDICA AND THERAPEUTICS

The lectures of this department are illustrated by a large collection of specimens of the various drugs most used by the veterinarian, with plates, and modes of prescribing and administering medicine.

## SURGERY

This branch is taught by a course of didactic and clinical lectures, and by special instruction in the various operations performed upon the cadaver. Operations are also performed at the hospital clinics before the class. Private operative classes, formed between the junior students, are taught the administration of medicines, modes of casting and securing animals for operations, bandaging, etc., and the senior students are instructed in the operations of firing, neurotomy, the various foot operations, etc.

## OBSTETRICS

This subject is lectured on and fully illustrated by models, artificial and natural preparations, as well as by drawings, which render the department essentially practical.

## HISTOLOGY AND SURGICAL PATHOLOGY

These subjects are divided into two sections: in the first, the histology of the various tissues of the body is illustrated; in the second, pathological changes in the various diseased processes are considered. Both branches are illustrated by plates and examinations of specimens with the microscope.

## CATTLE AND CANINE PATHOLOGY

These specialties of veterinary medicine are taught by didactic and clinical lectures, and illustrated by places and pathological specimens.

## OPHTHALMOLOGY

By lectures and practical demonstrations, the student is made familiar with the use of the ophthalmoscope, and with its application in the detection of disease and of soundness.

## SANITARY MEDICINE AND VETERINARY JURISPRUDENCE

In sanitary medicine illustrated didactic lectures are delivered. Most recent discoveries in contagious diseases and prophylaxy receive special attention, while exhibitions of post mortem lesions obtained from cadavers make the student familiar with an important branch of his profession. In veterinary jurisprudence the subjects of age, external form and writing certificates are treated of in didactic and practical lectures.

## SHOEING

In this department, physiological, orthopedic and surgical shoeing will be treated by a competent lecturer, fully acquainted with both the theoretical and practical branches of this department of veterinary education. In connection with this a special course of lectures on diseases of the foot will also be delivered.

## HYGIENE

The general rules of hygiene, stabling and feeding are presented to the class in a number of didactic lectures during the spring session.

## PRACTICAL CHEMISTRY

In the practical chemical laboratory of the college the students are taught the various manipulations of chemical analysis applicable to physiology, pathology and toxicology.

## PRACTICAL MICROSCOPY

Private classes are formed by Professor Gottheil, in which practical work with the microscope is taught, covering the study and preparation of healthy and diseased structures, coloring and mounting of specimens, etc.

## PRACTICAL PHARMACY

The members of the class, divided into sections, are taught the manipulation and compounding of the drugs most generally used by the veterinarian.



## PHYSICAL DIAGNOSIS

Practical instruction of this all important subject is given on the living subject, and readily illustrated by the numerous patients that are brought to the clinics or left in the hospital for treatment.

## CLINICAL INSTRUCTION

The hospital clinics are held daily by the professors of theory and practice and of surgery, while the out-door patients' clinics are held twice a week by veterinarians of the medical staff.

## PATHOLOGICAL ANATOMY

Autopsies are made on all the animals dying in the hospital, and on cadavers brought to the college for that purpose.

## REQUIREMENTS FOR GRADUATION

## Chapter 443, laws of 1888

Section 5—The said trustees and their successors shall have the power to confer the degree of doctor of veterinary surgery, and issue veterinary diplomas to only such students as shall have attained the age of 21 years, shall be of good moral character, shall have received a good English education, and pursued at least a full three years' course of medical and veterinary study, after the age of 18 years, including attendance upon at least two regular sessions of medical and veterinary lectures in a regularly incorporated veterinary college or veterinary or medical department of a college or university, the last of which sessions of study shall have been at said American Veterinary College, and shall have passed the examinations prescribed by the rules and regulations of the American Veterinary College.

Graduates of incorporated medical colleges will be required to attend one regular winter session of lectures in this college.

Graduates of agricultural colleges will have an allowance made them for such branches as they may have attended on subjects embraced in the curriculum of this college (viz., the fees of such lectures) provided they can pass a satisfactory examination on said branches immediately after matriculating. The same privileges are granted to regular graduates of colleges of pharmacy.

## BUILDINGS

Main building, three story brick, one class room, 141 seats.  
Class room building one story brick, one class room, 141 seats.  
Value of both buildings, about \$30,000; rented.



## ADDITIONAL INFORMATION

Steps are being taken for erecting a building on the two lots owned by the trustees. The sinking fund has donated \$6,000 and about \$24,000 remains to be raised. It is hoped that by next spring the trustees will be able to begin building.

## NEW YORK OPHTHALMIC HOSPITAL

*Third av. and 23 st., New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

- 24 Ap 1852 New York Ophthalmic Hospital incorporated under act of 1848, for purpose of extending aid to needy persons afflicted with diseases of the eye, and of affording facilities for instruction of medical students in treatment of all diseases of the eye.
- 1 My 1868 Above certificate of incorporation amended by legislature to include diseases of the ear.
- 20 My 1879 Above amended by giving directors power, on recommendation of surgeons to grant degree of *oculi et auris chirurgus* (surgeon of the eye and ear) on qualified students of the institution.
- 3 Ap 1883 Above amended by including all diseases of the throat.

## TRUSTEES

Elected

1862	President, Thomas L. Smith	Brooklyn
1872	Treasurer, Elias C. Benedict	29 Broad st.
1870	R. C. Root	Tarrytown
1862	George W. Clarke, Ph. D	232 W. 123 st.
1862	C. C. Corson	253 W. 128 st.
1866	Cornelius O'Reilly	34 E. 45 st.
1872	F. F. Allen, M. D., LL. D	10 E. 36 st.
1872	Roswell P. Flower	597 Fifth av.
1872	Mrs Emma A. Keep Schley	601 Fifth av.
1883	C. H. Smith	Brooklyn
1884	E. A. Moen	135 W. 70 st.
1885	David Dows, jr.	9 E. 69 st.
1887	Jared S. Babcock	2083 Fifth av.

## Elected

- 1888 William C. Martin . . . . . 155 W. 21 st.  
 1888 George S. Norton, M. D . . . . . 154 W. 34 st.  
 1889 Henry C. Houghton, M. D . . . . . 7 W. 39 st.

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. Ophthalmic.

- 1875 President, William E. Rounds, M. D., O. et A. Chir.  
 M. D. New York Homœopathic Medical College 1874; O. et A. Chir. New York Ophthalmic Hospital 1880; Member New York State Homœopathic Medical Society.
- 1876 Dean, F. H. Boynton, M. D., O. et A. Chir.  
 M. D. New York Homœopathic Medical College 1874; O. et A. Chir. New York Ophthalmic Hospital 1880; Professor of ophthalmology and otology, Woman's Medical College 1878; Member New York State Homœopathic Medical Society.
- 1872 Treasurer, Elias C. Benedict, 29 Broad st., New York.  
 Secretary, Arthur B. Norton, M. D., O. et A. Chir. 152 W. 34 st.  
 M. D. New York Homœopathic Medical College 1881; O. et A. Chir. New York Ophthalmic Hospital 1882; Surgeon, New York Ophthalmic Hospital; Ophthalmic surgeon, Protestant Half Orphan Asylum; Visiting oculist, Laura Franklin Free Hospital for Children; Member New York State Homœopathic Society, American Institute of Homœopathy, New York Society of Medical and Scientific Investigation; Editor Oculist and aurist.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. Ophthalmic and years spent in teaching.

- Henry C. Houghton, M. D. Professor of Aural Pathology and Therapeutics and Diseases of the Lens and Humors of the Eye.  
 M. D. University of the City of New York.
- 1878 George S. Norton, M. D. Professor of Diseases of Optic Nerve and Retina, 154 W. 34 st.  
 M. D. New York Homœopathic Medical College 1872; Professor of clinical ophthalmology, New York Homœopathic Medical College; Member Homœopathic Medical Society of the State of New York, American Institute of Homœopathy; Author Ophthalmic therapeutics; Editor Journal of ophthalmology, otology and laryngology.

- 1875 William E. Rounds, M. D., O. et A. Chir. President and  
15 Professor of Diseases of the External and Middle Ear.

See also "Administration."

- 1876 F. H. Boynton, M. D., O. et A. Chir. Dean and Professor  
15 of Diseases of the Uveal Tract and Affections of the  
Muscles.

See also "Administration."

- 1876 Charles Deady, M. D., O. et A. Chir. Professor of Sympa-  
11 thetic Ophthalmia, Amaurosis and Amblyopia, 59 W.  
49 st.

M. D. New York Homœopathic Medical College 1876; O. et A. Chir. New York Ophthalmic Hospital 1878; Assistant surgeon, New York Ophthalmic Hospital 1878-80, Lecturer, 1878-84, House surgeon 1880-84; Secretary and treasurer American Homœopathic Ophthalmological and Otological Society 1883; Surgeon, New York Ophthalmic Hospital 1884-87; President Society Medical Scientific Investigation; Treasurer Homœopathic Medical Society of the State of New York; Editor Journal of ophthalmology, otology and laryngology.

- 1880 N. L. MacBride, M. D., O. et A. Chir. Professor of Ophthal-  
11 moscopy and Refraction, 114 W. 47 st.

M. D. Hahnemann Medical College, Chicago 1878; O. et A. Chir. New York Ophthalmic Hospital 1880; Delegate to Homœopathic Medical Society of the State of New York.

- C. S. Elebosh, M. D., O. et A. Chir. Professor of Diseases of  
the Lids, Lachrymal Apparatus and Orbit.

M. D. New York Homœopathic Medical College 1881; O. et A. Chir. New York Ophthalmic Hospital 1883.

- 1880 Charles C. Boyle, M. D., O. et A. Chir. Professor of  
11 Ophthalmic Therapeutics and Diseases of the Uveal  
Tract, 6 E. 34 st.

M. D. New York Homœopathic Medical College 1877; O. et A. Chir. New York Ophthalmic Hospital 1880; Surgeon, New York Ophthalmic Hospital; Eye surgeon, Ward's Island Hospital and Hahnemann Hospital; Member New York State Homœopathic Medical Society.

- Arthur B. Norton, M. D., O. et A. Chir. Professor of  
7 Ophthalmology, 152 W. 34 st.

See also "Administration."

1885 T. C. Williams, M. D., O. et A. Chir. Lecturer on Ophthalmoscopy.  
5

M. D. New York Homœopathic Medical College 1881; O. et A. Chir. New York Ophthalmic Hospital 1883; Professor of diseases of the heart and lung New York Medical College and Hospital for Women.

1887 E. J. Pratt, M. D., O. et A. Chir. Assistant Surgeon.

2 B. S. Bowdoin College 1877; M. D. New York Homœopathic Medical College 1881; O. et A. Chir. New York Ophthalmic Hospital 1887; Resident physician, Brooklyn Maternity Hospital 1881-84; Attending physician, Home for the Friendless 1886-; Member Homœopathic Medical Society of the State of New York.

1889 Charles H. Helfrich, M. D., O. et A. Chir. Lecturer on  
1 Anatomy of the Ear, 201 E. 23 st.

M. D. New York Homœopathic Medical College 1884; O. et A. Chir. New York Ophthalmic Hospital 1887; Member American Institute of Homœopathy, Homœopathic Medical Society of the State of New York.

## HONORARY DEGREES, ETC.

No honorary degrees are ever given.

No college appointments, prizes, scholarships, fellowships, requirements for admission or courses of study reported.

## REQUIREMENTS FOR GRADUATION

The state of New York having granted a charter to this hospital to confer the degree of oculi et auris chirurgus, the directors and surgeons have established the following conditions for obtaining it:

The candidate must have received the degree of doctor of medicine from some regular medical college at least one year previous to applying for the examination, and the diploma must be shown to the college committee.

The examination for the degree embraces

*Normal anatomy* of the eye and ear, both general and minute.

*Pathological anatomy* of the eye and ear.

*Differential diagnosis* of diseases of the eye and ear,—The candidate must be able to give not only a theoretical diagnosis, but also to make a correct practical one; in these examinations the clinical element of the hospital will be utilized.



*General and special therapeutics* of the eye and ear, including homeopathic therapeutics.

*Operative surgery*, descriptive and practical.

These examinations are oral and written, as well as clinical. The degree is conferred only on such as prove themselves accomplished experts in these specialties, as it is the intention of the directors and surgeons to make the possession of this degree an evidence of thorough fitness for the practice of ophthalmology and otology. No honorary degrees are given.

A certificate of attendance at throat clinics is granted by the directors on written recommendation of three fourths of the faculty.

### BUILDINGS

Main building, five story, brick and stone, built 1872, total floor area 25,000 sq. ft., value \$200,000 ; dispensary and consultation room, floor area 2,400 sq. ft. ; library 420 sq. ft.

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## NEW YORK POLYCLINIC

214 E. 34 st., New York

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
23 O	1882	Free dispensary of New York Polyclinic incorporated, New York Polyclinic opened, being first school for graduates in America independent of an undergraduate college.
15 N	"	New York Polyclinic incorporated.

### TRUSTEES

President, Charles Coudert

Treasurer, Virgil P. Gibney, M. D.

Secretary, John A. Wyeth, M. D.

Rev. Thomas Armitage

Fordyce Barker, M. D., LL. D.

W. A. Butler

H. Dormitzer

Thomas Addis Emmet, M. D., LL. D.

Julius Hammerslaugh  
 Alfred L. Loomis, M. D.  
 Samuel Riker  
 Francis R. Rives  
 Hon. Horace Russell  
 T. Gaillard Thomas, M. D.  
 Hon. B. F. Tracy  
 William T. Wardwell  
 Leonard Weber  
 Hon. Everett P. Wheeler

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. Polyclinic.

President, W. Gill Wylie, M. D.

Gynecologist, Bellevue Hospital.

Treasurer, Virgil P. Gibney, M. D.

B. A. College of Arts, Kentucky University 1869, M. A. 1872;  
 M. D. Bellevue Hospital Medical College 1870; Orthopedic  
 surgeon, Nursery and Child's Hospital; Surgeon-in-chief,  
 Hospital for Ruptured and Crippled; Member American  
 Academy of Medicine, American Medical Association,  
 American Orthopædic Association.

1882 Secretary, John A. Wyeth, M. D.

M. D. University of Louisville 1869, Bellevue Medical College  
 1873; Visiting surgeon, Mt Sinai Hospital; Consulting sur-  
 geon, St Elizabeth Hospital; Author Text-book on surgery,  
 1887; Member New York State Medical Association.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. Polyclinic and years spent  
 in teaching.

James R. Leaming, M. D. Emeritus Professor of Diseases  
 of the Chest and Physical Diagnosis.

Special consulting physician in chest diseases, St Luke's  
 Hospital.

1882 Edward R. Bronson, M. D. Professor of Dermatology, 123  
 9 W. 34 st.

B. A. Yale 1865; M. D. College of Physicians and Surgeons  
 1869; House surgeon, Bellevue Hospital 1869; Clinical pro-  
 fessor of dermatology, Woman's Medical College 1884-86;  
 Visiting dermatologist, Charity Hospital; Consulting derma-  
 tologist, Bellevue Hospital, out-door department.

1882 A. G. Gerster, M. D. Professor of Surgery, 56 E 25 st.

- 9 Graduate State Gymnasium Kaschau Hungary 1866; M. D. University of Vienna 1872, Ch. D. 1872; Assistant surgeon, Austrian Army 1872-73; Visiting surgeon, German Hospital, New York 1879; Visiting surgeon, Mt Sinai Hospital 1880; Member American Surgeons' Association.

1882 Virgil P. Gibney, M. D. Professor of Orthopedic Surgery.

- 8 See also "Administration."

Landon Carter Gray, M. D. Professor of Diseases of the Mind and Nervous System.

Attending physician, St Mary's Hospital; Neurologist, Hospital for Ruptured and Crippled.

Emil Gruening, M. D. Professor of Ophthalmology.

Visiting ophthalmologist, Mt Sinai Hospital, the German Hospital.

Paul F. Munde, M. D. Professor of Gynecology.

Gynecologist, Mt Sinai Hospital; Consulting gynecologist, St Elizabeth Hospital.

1882 Andrew R. Robinson, M. D. Professor of Dermatology, 248

- 10 W. 42 st.

M. D. Bellevue Hospital Medical College 1868; M. B. University of Toronto; L. R. C. P. and L. R. C. S. Edinburgh; Professor of normal and pathological histology, Woman's Medical College 1880-90; Professor of dermatology, Woman's Medical College 1887-90; Member Société Française de Dermatologie et de Syphiligraphie, American Dermatological Association; Author Manual of dermatology; Collaborator in Satterthwaites manual of histology.

1882 David Webster, M. D. Professor of Ophthalmology, 266  
Madison av.

M. D. Bellevue Hospital Medical College 1868; Professor of ophthalmology, Dartmouth Medical College; Surgeon, Manhattan Eye and Ear Infirmary; Consulting ophthalmic surgeon, Hospital for Ruptured and Crippled, Hackensack Hospital, Paterson Eye and Ear Hospital; Consulting physician, Skin and Cancer Hospital; Ophthalmic surgeon, House of Mercy; Member American Ophthalmological Society, American Otological Society.

1882 John A. Wyeth, M. D. Secretary and Professor of Surgery.

- 13 See also "Administration."

W. Gill Wylie, M. D. President and Professor of Gynecology.

See also "Administration."

- 1882 R. C. M. Page, M. D. Professor of General Medicine and  
9 Diseases of the Chest.

M. D. University of Virginia 1867, University of New York 1868; House physician, Bellevue Hospital 1869; House surgeon, New York Woman's Hospital 1870; District physician, Fifth District, New York; Physician, St Elizabeth Hospital; Attending physician, Northwestern Dispensary, Department of chest diseases; Member American Medical Association, American Clinatological Society, Virginia Historical Society, New York Historical Society, American Historical Association, Paris Society for Study of Tuberculosis.

- 1885 D. Bryson Delevan, M. D. Professor of Laryngology and  
12 Rhinology.

B. A. Yale 1872; M. D. College of Physicians and Surgeons 1875; Laryngoscopic surgeon, New York Cancer Hospital; Consulting laryngoscopic surgeon, St Bartholomew's Hospital; Member American Laryngological Association.

- 1883 Joseph William Gleitsmann, M. D. Professor of Laryngology and Rhinology, 117 Second av.  
6

M. D. University of Wuerzburg 1865; Laryngologist and otologist, German Dispensary; Fellow Medical and Chirurgical Faculty of Maryland; Author Statistics of mortality from pulmonary phthisies in the U. S. and Europe, 1875.

- Oren D. Pomeroy, M. D. Professor of Otology.

Surgeon, Manhattan Eye and Ear Hospital; Ophthalmic surgeon, New York Infant Asylum; Consulting surgeon, Paterson Eye and Ear Infirmary.

- 1884 Henry N. Heineman, M. D. Professor of General Medicine  
16 and Diseases of the Chest.

M. D. College of Physicians and Surgeons 1874; Resident physician, Roosevelt Hospital 1874-75; Instructor in laboratory, College of Physicians and Surgeons 1875-79; Assistant pathologist and curator, Roosevelt Hospital 1875-83; Professor of practice of medicine, Woman's Medical College 1882-86; Attending physician, Mt Sinai Hospital.

- 1885 B. Sachs, M. D. Professor of Diseases of the Mind and  
6 Nervous System, 112 E. 61 st.

B. A. Harvard 1878; M. D. University of Strasburg 1882; Member American Neurological Association; Translator Meynert's psychiatry; Consulting neurologist, Montifiore Home for Chronic Invalids.



Thomas R. Pooley, M. D. Professor of Ophthalmology.

Surgeon-in-chief, New Amsterdam Eye and Ear Hospital;  
Ophthalmic surgeon, Sheltering Arms; Ophthalmologist, St  
Bartholomew's Hospital.

1888 L. Emmett Holt, M. D. Professor of Diseases of Children,  
3 15 E. 54 st.

B. A. University of Rochester 1875, M. A. 1878; Visiting phy-  
sician, New York Infant Asylum, Babies' Hospital; Consulting  
physician, Hospital for Ruptured and Crippled.

August Seibert, M. D. Professor of Diseases of Children.

Physician, Children's Department of the German Dispensary.

H. Marion Sims, M. D. Professor of Gynecology, 4 W. 47 st.

M. D. College of Physicians and Surgeons 1872; Gynecologist,  
St Elizabeth Hospital, New York Infant Asylum; Editor  
Hewitt's diseases of women, American edition, 1883.

1885 Wm. D. Fluhner, M. D. Professor of Genito-Urinary  
5 Surgery, 479 Fifth av.

Surgeon, Bellevue and Mt Sinai Hospitals.

1884 Henry C. Coe, M. A., M. D. Professor of Gynecology, 27  
7 E. 64 st.

B. A. Yale 1878, M. A. 1881; M. D. Harvard 1881, College of  
Physicians and Surgeons 1882; M. R. C. S. (England) 1884;  
L. R. C. P. London 1884; Attending Gynecologist, New York  
Cancer Hospital; Assistant surgeon, Woman's Hospital;  
Obstetric surgeon, Maternity Hospital; Obstetrician, New  
York Infant Asylum; Secretary American Gynecological  
Society; Collaborator American journal of medical science,  
Foster's medical dictionary, American system of gynecology,  
Wood's Reference handbook, Wood's Cyclopedia of obstetrics  
and gynecology.

1883 James R. Goffe, Ph. B., M. D. Lecturer on Gynecology.

Ph. B. University of Michigan 1873; M. D. Bellevue Hospital  
Medical College 1881; Assistant gynecologist, New York Skin  
and Cancer Hospital; Attending gynecologist, Northwestern  
Dispensary, Randall's Island Hospital.

1883 Robert H. M. Dawbarn, M. D. Lecturer on Operative  
10 Surgery.

Formerly Instructor in surgery and anatomy, College of  
Physicians and Surgeons; Member Pathological Associa-  
tion; Author An aid to materia medica.

1883 Arthur M. Jacobus, M. D. Lecturer on Gynecology.

10 Gynecologist, Northwestern Dispensary.

R. M. Cramer, M. D. Lecturer on Genito-Urinary Surgery and Surgical Dressings.

Assistant physician, Manhattan Hospital, department of nervous diseases.

William S. Gottheil, M. D. Lecturer on Dermatology.

Physician, Western Skin Infirmary.

Neil J. Hepburn, M. D. Lecturer on Ophthalmology.

Assistant surgeon, Manhattan Eye and Ear Hospital; Surgeon, Eye and Ear department of Demilt Dispensary; Oculist, Randall's Island Hospital.

1885 John Seymour Thacher, M. D. Lecturer on Pathology,

5 Bacteriology, Clinical Microscopy and General Medicine,  
33 W. 39 st.

B. A. Yale 1877; M. D. College of Physicians and Surgeons 1880; Pathologist, Presbyterian and St Luke's Hospitals.

1885 Brooks H. Wells, M. D. Lecturer on Gynecology, 71

2 W. 45 st.

M. D. College of Physicians and Surgeons 1884; Interne, Charity and Maternity Hospitals 1884-85; Associate editor, Sajous Annual of the universal medical sciences; Editor American journal of obstetrics.

1882 Edward A. Ayers, M. D. Lecturer on Obstetrics.

9 B. A. Illinois College 1877, M. A. 1880; M. D. University of the City of New York 1880; Attending physician, New York Lying-in Asylum, out-door department.

1884 W. W. Van Arsdale, M. D. Lecturer on Surgery and Surgical Dressing, 207 W. 56 st.

M. A. Gymnasium St Nicolai, Leipzig 1878; M. D. University of Leipzig 1883; Resident assistant surgeon, City Hospital, Leipzig 1883-84; Attending surgeon, Eastern Dispensary.

1885 Justin L. Barnes, M. D. Lecturer on Ophthalmology,

5 45 E. 41 st.

B. S. Cornell 1881; M. D. University Medical College 1885; Assistant surgeon, Manhattan Eye and Ear Hospital 1885-; Instructor in otology, University Medical College 1889-.

- 1882 James P. Tuttle, M. A., M. D. Lecturer on Surgery and  
9 Surgical Dressing.

B. A. Westminster College 1877, M. A. 1881; M. D. University of Pennsylvania 1881; Instructor in surgery, New York Polyclinic 1882-84.

- T. T. Janeway, M. D. Lecturer on Otology.

Assistant surgeon, Manhattan Eye and Ear Hospital.

- William R. Pryor, M. D. Lecturer on Gynecology, 15  
Park av.

Visiting physician, St Elizabeth Hospital.

- F. W. Ring, M. D. Lecturer on Ophthalmology.

Assistant surgeon, Manhattan Eye and Ear Infirmary.

- 1886 Francis J. Quinlan, M. D. Lecturer on Laryngology and  
5 Rhinology.

Laryngologist, Northern Dispensary; Assistant surgeon, New York Eye and Ear Infirmary; Assistant surgeon, diseases of the throat and nose, Vanderbilt Clinic, College of Physicians and Surgeons; Consulting physician, St Joseph's and St Mary's Home.

- 1884 H. L. Collyer, M. D. Lecturer on Gynecology, 109 E. 54 st.  
7 M. D. Bellevue Hospital Medical College 1881.

- Charles H. Knight, M. D. Lecturer on Laryngology and  
Rhinology.

Assistant surgeon, Manhattan Eye and Ear Hospital, throat department; Laryngologist, Demilt Dispensary.

- Frederick Peterson, M. D. Lecturer on Nervous and Mental  
Diseases.

See also College of Physicians and Surgeons.

- Matthew D. Field, M. D. Lecturer on Mental Diseases.

- John Herbert Claiborne, M. D. Lecturer on Ophthalmology.

See also College of Physicians and Surgeons.

- 1886 E. J. Ware, M. D. Lecturer on Physical Diagnosis and  
4 General Medicine, 102 W. 93 st.

B. A. Harvard 1881; M. D. College of Physicians and Surgeons 1885; Member Pathological Association.

- Wm. Holland Wilmer, M. D. Lecturer on Ophthalmology.

Alexander B. Pope, M. D. Instructor in Diseases of the Chest and General Medicine.

Attending physician, department of heart and lungs, Demilt Dispensary; Attending physician, department of children, Vanderbilt Clinic; Attending physician in general medicine, out-door department, Bellevue Hospital.

Frank H. Ingram, M. D. Lecturer on Mental and Nervous Diseases.

Gustav A. Klettsch, M. D. Instructor in Gynecology.

Assistant surgeon, Woman's and Cancer Hospitals.

S. M. Payne, M. D. Instructor in Ophthalmology.

1885 F. H. Dillingham, M. D. Instructor in Dermatology, 636 Lexington av.

B. A. Bowdoin 1877, M. A. 1880; M. D. College of Physicians and Surgeons 1880; House physician and surgeon, St Francis Hospital 1880-82; Assistant professor of diseases of children, New York Post-Graduate Medical School and Hospital 1884-85; Attending physician, New York Free Dispensary for Children 1885-86; Assistant physician in diseases of heart and lungs, Demilt Dispensary 1886-87.

1888 Robert C. Myles, M. D. Demonstrator of Practical and  
3 Artistic Anatomy of Nose, Throat and Ear, 25 W. 36 st.

M. D. University of Louisiana Medical Department 1874.

Matthias L. Foster, M. D. Instructor in Otology.

Surgeon out-door department, Bellevue Hospital; Clinical assistant, Manhattan Eye and Ear Hospital.

Egbert Le Fevre, M. D. Instructor in Diseases of the Chest  
2 and General Medicine.

See also University of the City of New York, Department of Medicine.

C. H. Richardson, M. D. Instructor in Dermatology.

1888 W. N. Hubbard, M. D. Instructor in Diseases of the Chest  
2 and General Medicine, 7 E. 41 st.

B. A. Williams 1882, M. A. 1886; M. D. College of Physicians and Surgeons; Attending physician in general medicine, out-door department, Bellevue Hospital 1888- ; Member American Academy of Medicine.



1889 W. R. Townsend, M. D. Instructor in Orthopedic Surgery,  
16 Park av.

B. A. Columbia 1877, M. A. 1880; M. D. College of Physicians  
and Surgeons 1880; Assistant surgeon, Hospital for Ruptured  
and Crippled; Orthopedic surgeon, New York Infant asylum;  
Member Medical Association and State Medical Society.

G. F. Carey, M. D. Instructor in Ophthalmology.

Assistant surgeon, Manhattan Eye and Ear Hospital.

F. M. Crandall, M. D. Instructor in Diseases of Children.

1889 John A. Fordyce, M. A., M. D. Lecturer on Dermatology,  
2 66 Park av.

B. A. Adrian College 1878, M. A. 1889; M. D. Chicago Medical  
College 1881, University of Berlin 1888; Member American  
Association of Andrology and Syphilology, American Derma-  
tological Association; Visiting surgeon, St Bartholomew's  
Hospital; Attending physician, out-door department, Bellevue  
Hospital; Associate editor, Journal of cutaneous and genito-  
urinary diseases.

William Rice Ballou, M. D. Instructor in Surgery.

See also New York College of Veterinary Surgeons.

Franklin Soper, M. D. Instructor.

Clinical assistant, Manhattan Eye and Ear Hospital; Ophthalmic  
and aural surgeon, St John's Riverside Hospital, Yonkers.

G. A. Kerr, M. D. Instructor in Diseases of the Mind and  
Nerves.

1886 Edward M. Liell, M. D., Ph. G. Instructor in Gynecology.

5 M. D. Bellevue Hospital Medical College 1884; Ph. G. New  
York College of Pharmacy 1878.

#### CLINICAL ASSISTANTS

P. Outerbridge, M. D. Department of Gynecology.

Assistant surgeon, Woman's and Cancer Hospitals.

E. L. McGinnis, M. D. Department of Gynecology.

Electro-therapeutist, Woman's Hospital.

William Cowen, M. D. Department of Ophthalmology.

Visiting physician, department of eye and ear, German Dis-  
pensary, West Side; District physician, Mt Sinai Hospital.

P. J. Rosenheim, M. D. Department of Dermatology.

Arnot Spence, M. D. Department of Obstetrics.

Samuel Murtland, M. D. Department of Chest and General Medicine.

William C. Rives, jr, M. D. Department of Chest and General Medicine.

Dispensary physician, French Hospital; Physician, Newport, R. I., Hospital.

C. B. Learoyd, M. D. Department of General Medicine.

Robert W. Glassford, M. D. Department of Surgery.

Attending physician, Out-patient department of New York Hospital, Northern Dispensary.

George A. Richards, M. D. Department of Throat and Nerves.

Assistant, Demilt Dispensary, Manhattan Eye and Ear Hospital.

B. W. MacNichol, M. D. Department of Otology.

Clinical Assistant, Manhattan Eye and Ear Hospital.

1889 L. J. Ladinsky, M. D. Department of Gynecology, 248 E. 2 Broadway.

B. A. College of the City of New York 1884; M. D. College of Physicians and Surgeons 1887.

A. B. Tucker, M. D. Department of Gynecology.

1888 W. B. Pritchard, M. D. Lecturer on Nervous and Mental 1 Diseases, 355 W. 58 st.

Attending physician, Hudson Dispensary, department of general medicine; Member New York State Medical Society; Author Encyclopedia of diseases of children.

Henry J. Kelly, M. D. Department of Surgery.

J. H. Brower Browning, M. D. Department of Surgery.

1884 H. F. Nordeman, M. D. Department of Surgery; Instructor 7 Genito-Urinary Surgery.

B. A. Columbia 1881; M. D. College of Physicians and Surgeons 1884.

A. N. Strouse, M. D. Department of Ophthalmology.

W. O. Plimpton, M. D. Department of Surgery.

L. I. Kiefer, M. D. Department of Dermatology.

H. I. MacDonald, M. D. Department of Orthopedic Surgery.

- 1888 Walter E. S. Preston, M. A., M. D. Department of Chest  
8 and General Medicine, 105 E. 89 st.

B. A. Baldwin University and German Wallace College 1880,  
M. A. 1882; M. D. Dartmouth Medical College 1887; Principal  
Limerick Academy, Maine 1880-86; Attending physician, Tre-  
mont Hospital for Consumptives 1888-

- C. S. Wood, M. D. Department of Gynecology.

Clinical assistant, Out-door department Roosevelt Hospital.

- M. L. Goodkin, M. D. Department Nervous and Mental  
Diseases and Operative Surgery.

- E. R. Sill, M. D. Department of Children.

- B. MacDonald, M. D. Department of Ophthalmology.

Physician, department of eye and ear, Woman's Medical College  
of the New York Infirmary.

- Herman Weber, M. D. Department of Children.

Physician, German Dispensary.

- Charles Wuest, M. D. Department of Children.

- A. B. Townshend, M. D. Department of Ophthalmology.

- J. E. Giles, M. D. Department of Ophthalmology.

Attending surgeon, Demilt Dispensary.

- G. R. Newby, M. D. Department Throat and Nose.

Clinical assistant, Manhattan Eye and Ear Hospital, throat  
department; Assistant, Vanderbilt Clinic.

- H. M. Painter, M. D. Department Throat and Nose.

- W. B. Pritchard, M. D. Department of Nervous and Mental  
Diseases.

- 1888 E. G. Mason, M. D. Instructor Department of Nervous and  
3 Mental Diseases, 331 W. 48 st.

M. D. Bellevue Hospital Medical College 1887; Attending sur-  
geon, Hudson Dispensary; Associate editor, Gaillard's  
medical journal.

#### VACANCIES

- James B. Hunter, M. D. President and professor of  
gynecology. Died 10 Je 1889.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships  
or fellowships reported.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

## GYNECOLOGY

In this department the course of study consists in the presentation of cases for examination, diagnosis and treatment. The members of the various sections examine the patients and determine the diagnosis and treatment under the supervision of the teacher. Each member of the class in gynecology will be entitled to four special clinics each week, with the privilege of attending but not taking active part in other clinics for the diseases of women.

In the hospital clinics the more important operations of laparotomy, lacerations of the cervix and perineum, fistulæ, etc. are performed before limited sections of the class.

By the courtesy of Dr T. A. Emmet and Professor T. Gaillard Thomas, the instructive clinics held at the Woman's Hospital are open to a limited number of the members of the class in gynecology at the Polyclinic.

## OPERATIVE GYNECOLOGY

Professor Coe and his assistants will conduct a practical course in operative gynecology on the cadaver, manikin and, so far as practicable, on the living subject. Course: 12 lessons of two or more hours each; class limited to six.

## SURGERY

Clinics are given daily at the Polyclinic, which illustrate the diagnosis and treatment of the various surgical diseases, deformities and injuries.

## OPERATIVE SURGERY

This course consists of daily lessons covering a period of between two and three weeks; and Dr Dawbarn will demonstrate a large number of operations.

These operations are performed by the members in turn, after a description by the instructor of the most recent methods. The operations comprise the ligations of arteries, amputations, excisions of joints, the special surgery of the abdomen, including lithotomy



and gunshot wounds of the intestines, also skull, tracheal, thoracic and other regional work in general surgery. Much time is devoted to small and frequently needed operations.

Work begins on or about September 15, and ends with the advent of warm weather in May.

#### GENITO-URINARY SURGERY

Four clinics each week will be given at the Polyclinic, in the special surgery of the genital and urinary organs by Professor Fluhrer and his assistants. Professor Fluhrer will also operate before the classes in Bellevue and Mt Sinai Hospitals.

#### DISEASES OF THE CHEST, PHYSICAL DIAGNOSIS AND GENERAL MEDICINE

The course in the department of Professor Page given on Mondays, Wednesdays and Fridays includes: 1—Special and minute anatomy of the chest and contents; 2—Chest acoustics; 3—Auscultation and normal respiration and normal heart-sounds; 4—Abnormal respiration and abnormal heart-sounds, rhythm and movements, and their interpretation; 5—Râles, rhonchi, and their significance; 6—Heart-murmurs as evidence of organic disease and functional derangements; 7—Percussion and auscultation—diagnosis, prognosis, treatment.

On Tuesdays and Saturdays, in addition to the above, Professor Heineman will present cases, demonstrating all the typical, functional and organic lesions in the range of general medicine. Special attention will be given to the development of individual cases clinically, and to systematic instruction in symptomatology, methods of physical exploration, differential diagnosis and therapeutics.

On Thursdays, Dr Thacher will give special instruction in diseases of the abdominal organs and the blood.

#### DISEASES OF CHILDREN

Professors Holt and Seibert or their assistants hold a daily clinic at which the diseases of infancy and childhood are fully illustrated, special attention being given to diagnosis.

#### DERMATOLOGY

Professors Robinson and Bronson give practical instruction in dermatology and syphilis, special attention being paid to differential diagnosis and the approved methods of treatment.

## OPHTHALMOLOGY

Professors Gruening, Webster and Pooley, or their assistants, hold a daily clinic at the Polyclinic. The diagnosis and treatment of diseases and injuries of the eye are taught, including the use of the ophthalmoscope, the adjustment of classes and surgical operations.

## LARYNGOLOGY AND RHINOLOGY

On four days of each week, there are demonstrations of the latest methods of inspection, diagnosis and treatment of the diseases of the nose, mouth, pharynx and larynx. The members of the class are familiarized with the instruments of precision appertaining to this department.

## OTOLOGY

A special department of otology has been created and placed under the direction of Professor Pomeroy, who gives two clinics each week.

## DISEASES OF THE MIND AND NERVOUS SYSTEM

Professor Gray's course is one of systematic demonstration of the clinical features of diseases of the mind and nervous system, as well as of special instruction in the mechanism and application of electrical and other apparatus used in the diagnosis and treatment of diseases of the nervous system.

Professor Sachs gives practical courses on the anatomy and physiology of the central nervous system, with special reference to the diagnosis and localization of disease. These lectures are amply illustrated by means of dissections, preparations, models, microscopical specimens and charts. Clinical cases will be shown in connection with this course.

## OBSTETRICS

A large obstetrical service is carried on in connection with the polyclinic, which is in charge of Dr Ayers, who gives instruction in the management of labor, giving special attention to abdominal palpation as a means of determining fetal presentation and positions, and to the use of the forceps, opportunity being afforded members of the class to apply them.

The management of difficult presentations, including the obstetric operations, is illustrated, and the most approved methods of treating the diseases of pregnancy are discussed.

HISTOLOGY, PATHOLOGY, BACTERIOLOGY, CLINICAL MICROSCOPY AND  
CLINICAL CHEMISTRY

The laboratories for work in these departments are open at all times, so that, in addition to the regular hours of instruction, students may work by themselves in these branches as many hours in the day as they choose.

Besides the laboratory work, opportunities are offered to the students to attend autopsies at certain of the hospitals of the city.

The courses of instruction are as follows :

1 A course in clinical microscopy and chemistry. This course teaches the use of the microscope, and of the more valuable chemical tests as aids in clinical diagnosis. It includes the analysis of urine, the examination of the blood, contents of cysts, abdominal fluids, sputum and other discharges, and the detection of tubercle-bacilli, gonococci, trichinæ, and other parasites.

2 A course in practical histology and pathology. This includes the methods of preparing sections for microscopical examination, the study of the tissues of the body in health and disease, and the diagnosis of tumors. These studies are made both with hardened specimens in the laboratory, and with fresh specimens at the hospitals.

3 A course in practical bacteriology. This gives practical work in the cultivation, inoculation, staining and examination of bacteria, including the tubercle-bacilli, gonococci, bacilli of malignant pustule, pus-producing bacteria and many others.

Each course consists of 24 lessons, and lessons omitted may be made up at the end.

Course 2 may be divided into two courses of 24 lessons each, one in normal and one in pathological histology.

## BUILDINGS

Main building, four story brick and iron, eight class rooms, 300 seats, value \$64,000.

## ADDITIONAL INFORMATION

This institution is a post graduate school of clinical medicine and surgery and of practical work in the chemical and biological laboratories. The term of study varies from one year to six weeks, although physicians who can remain only a shorter period are matriculated. Every applicant for admission is required to give proof of respectability and standing as a regular graduate in medicine.



# NIAGARA UNIVERSITY

## MEDICAL DEPARTMENT

*Buffalo*

For historic sketch see Niagara University, p. 782.

### TRUSTEES

There is no board of trustees, the management of the medical department being wholly under the control of the faculty.

### ADMINISTRATION

Figures in column at left give first year of service in Niagara University, Medical Department,

1883 President, John Cronyn, L. P. B., M. B., M. D., Ph. D. 49 Franklin st.

Matriculant in Medicine 1845; examination equal to B. A. in the University of Toronto, Canada (then University of King's College) 1850, Licentiate provincial boards 1859, M. B. 1860; M. D. Thesis and Prizeman in the University of Toronto, Ontario 1860; Ph. D., Niagara University 1887; Founder and Fellow of New York State Medical Association.

1883 Treasurer, Thomas Lothrop, M. D. 153 Delaware av.

M. D. University of Michigan 1858; M. D. Niagara University 1886; Superintendent of education, Buffalo 1870-72; Member American Association of Obstetricians and Gynecologists; Editor Buffalo medical and surgical journal.

1883 Secretary, Alvin Allace Hubbell, M. D. 212 Franklin st.

M. D. University of Buffalo 1876; Ophthalmic and aural surgeon, Buffalo Hospital of the Sisters of Charity; Fellow New York State Medical Association.

### INSTRUCTION

Figures in column at left give first year of service in Niagara University, Medical Department and years spent in teaching.

1884 William S. Tremaine, M. D. Emeritus Professor of Principles and Practice of Surgery and Clinical Surgery, 217 Franklin st.

M. D. University of Pennsylvania 1859; Professor of surgery, Kansas City Medical College 1879-80; Fellow of American Surgical Society; Fellow New York Medical Association; Member American Medical Association; Surgeon, U. S. Army (retired list).



- 1883 John Cronyn, M. D., Ph. D. President and Professor of  
7 Principles and Practice of Medicine and Clinical Medicine,  
49 Franklin st.

See also "Administration."

- 1883 Thomas Lothrop, M. D. Professor of Obstetrics, 153  
8 Delaware av.

See also "Administration."

- 1883 Alvin Allace Hubbell, M. D. Professor of Ophthalmology,  
8 Otology and Laryngology, 212 Franklin st.

See also "Administration."

- 1884 Henry D. Ingraham, M. D. Professor of Gynecology and  
7 Pediatrics, 405 Franklin st.

M. D. University of Buffalo 1866; Member Central New York  
Medical Association, New York State Medical Association,  
Tenth International Congress, Berlin.

- 1883 George E. Fell, M. D. Professor of Physiology and Micro-  
7 scopy, 72 Niagara st.

M. D. Buffalo University 1882, Niagara University 1886; Mem-  
ber American Society of Microscopists, Royal Microscopical  
Society, London, American Medical Association, New York  
State Medical Association; Author Forced respiration, by  
whom first systematic operation made, etc.

- 1886 Simeon Tucker Clark, M. A., M. D. Professor of Medical  
6 Jurisprudence, Lockport.

M. D. Berkshire Medical College 1860; M. A. Genesee College  
1866; M. D. Niagara University 1886; Fellow New York State  
Medical Association; Member American Association for the  
Advancement of Science.

Floyd S. Crego, M. D. Professor of Nervous Diseases and  
Insanity, 280 Franklin st.

- 1885 William H. Pitt, M. A., M. D., Ph. D. Professor of  
30 General Chemistry and Physics, 2 Arlington pl., New  
York.

B. A. Union 1860, M. A. 1863; M. D. Medical University of  
Buffalo 1879; Ph. D. Alfred University 1886; Principal high  
school, Spencer, New York 1863-66; Superintendent of educa-  
tion, Warren, Ohio 1867-69; Principal Friendship Academy  
1869-72; Principal Angelina Academy 1863-66; Professor of  
physics and chemistry, Buffalo High School 1872-90; State  
analyst of food and drugs 1881-82; Member American Asso-  
ciation for the Advancement of Science.

- 1887 Herman Mynter, M. D. Professor of Principles and Practice  
4 of Surgery and Clinical Surgery, 195 Franklin st.

Candidatus philosophia (equal to B. S. in American Universities)  
Copenhagen, Denmark 1865; Graduate in Medicine, University of Copenhagen 1871; Assistant surgeon, Royal Danish Navy 1872; Assistant editor, Buffalo medical and surgical journal 1879-82; Surgeon and lecturer in clinical surgery, Buffalo General Hospital 1882-87; Surgeon, Sisters of Charity Hospital.

- 1884 Herbert Mickle, M. D. Professor of Descriptive and Sur-  
7 gical Anatomy, 9 Niagara st.

M. D. Trinity University, Toronto 1881; M. R. C. S. England 1883; L. R. C. C. London 1883; M. D. C. M. Trinity University 1883; Lecturer on pathology, Niagara University 1884-87; Professor of anatomy, Niagara University 1888; Attending surgeon, Emergency Hospital, Buffalo 1884; Attending Surgeon, Sisters of Charity Hospital 1887-88.

- 1886 Albert Edward Persons, M. D. Professor of Materia Medica  
4 and Therapeutics, 93 W. Mohawk st.

M. D. University of the City of New York 1880-81; Lecturer on hygiene, Niagara Medical University 1886; Professor of materia medica, pharmacology and therapeutics 1887- .

- 1885 Carleton C. Frederick, M. D. Adjunct Professor of Obstet-  
5 rics, 64 Richmond av.

B. S. University of Michigan 1877; M. D. University of Buffalo 1881; Fellow American Association of Obstetricians and Gynecologists, New York State Medical Association; Member American Medical Association.

- 1888 John A. Miller, M. A., M. S., Ph. D. Professor of Medical  
4 Chemistry and Toxicology, 157 Hodge st.

B. S. University of Illinois 1885, M. S. 1888; M. A. and Ph. D. University of Berlin 1888; Assistant in chemistry, University of Illinois 1883-84; Lecturer on medical chemistry and toxicology, Niagara University, Medical Department 1888-89; Assistant in chemistry, Cornell 1889-90; Professor of medical chemistry and toxicology, Niagara University, Medical Department 1889-; Member Berlin Chemical Society, American Society of Microscopists; Fellow Chemical Society of London; Author Ein Beitrage zur Kenntniss der Säure-Nitrite, Outlines of qualitative analysis; Associate editor Buffalo medical and surgical journal.

- 1883 Frank Hamilton Potter, M. D. Lecturer on Diseases of the  
8 Nose and Throat, 273 Franklin st.

M. D. University of Buffalo 1882; Assistant in surgery, Niagara University, Medical Department 1883-84; Assistant in materia medica, 1885-87, Lecturer on diseases of the nose and throat 1887-; Member Medical Society of the State of New York, American Medical Association; Associate editor Buffalo medical and surgical journal.

- 1887 Frank A. Harrington, M. A., M. D. Lecturer on Hygiene,  
5 31 Franklin st.

B. A. Harvard 1884, M. A. 1887; M. D. Harvard Medical School 1887; House officer, Boston Lying-in Hospital 1887; Assistant lecturer on therapeutics and materia medica, Niagara University 1887-79.

- 1888 John D. Flagg, M. D. Demonstrator of Anatomy, 125 E.  
4 Eagle st.

M. D., C. M. McGill University, Montreal 1887; L. R. C. P. and L. R. C. S. Edinburg 1887; L. F. P. & S. Glasgow 1887.

- Eugene A. Smith, M. D. Assistant in Surgery and Lecturer  
4 on Surgical Pathology, 66 High st.

M. D. University of Buffalo 1887.

- 1889 Sydney A. Dunham, M. D. Assistant in Physiology and  
2 Lecturer on Physical Diagnosis (Spring course), 280  
Franklin st.

- 1889 Henry C. Buswell, M. D. Adjunct Professor of Materia  
1 Medica and Therapeutics, 358 S. Division st.

M. D. Niagara University 1888.

- 1889 William C. Krauss, M. D. Lecturer on Pathology, 382  
2 Virginia st.

B. S. Cornell 1884; M. D. Bellevue Hospital Medical College 1886; M. D. (magna cum laude) University of Berlin, Germany 1888; Non-resident lecturer, Cornell 1890; Member American Neurological Society, American Microscopical Society; Associate editor Buffalo medical and surgical journal, Journal of nervous and mental diseases (New York); Collaborator Revue internationale de bibliographie medicale, Paris.

Henry R. Jessel, B. S. Lecturer on Chemistry and Physics  
and Demonstrator in Chemistry, High School.

- 1890 T. Haven Ross, M. D. Lecturer on Orthopedic Surgery and  
1 Dermatology, 344 Ashland av.

M. D. University of Pennsylvania 1888.



## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

Three full courses of instruction are required by this college to complete its curriculum. The faculty earnestly recommends, however, that students extend their time of study to four years.

The course of study has been arranged or graded in such a manner as to advance the student progressively and systematically from one subject to another. To each term and each year certain studies are assigned, in which the student is required to become proficient before entering upon more advanced studies.

The methods embrace didactic lectures, clinical lectures, recitations, demonstrations, laboratory work and bedside studies, conducted by a large corps of experienced and efficient teachers.

The lectures in the various departments are illustrated by manikins, models, charts, dry and wet specimens, dissections, vivisections, experiments, microscopical and practical demonstrations, clinical cases, etc.

The didactic lectures are delivered in the college building, while the clinical instruction is given in the amphitheatre and wards of the hospitals, and in the various dispensaries.

Recitations occupy a prominent place in the teaching methods of this school, and the professors and lecturers in each department hold quizzes regularly during the term.

### THEORY AND PRACTICE OF MEDICINE

Pathology, including pathological anatomy and histology, is taught by lectures and demonstrations, and is judiciously combined with the instruction in medicine. Particular attention is given to the diagnosis and treatment of disease, and practical formulæ are given to meet the various pathological conditions.

### OBSTETRICS

In this department, in addition to the didactic lectures, supplemented by thorough and systematic examination, the student is made familiar with the use of obstetric instruments in difficult



labor cases at the Maternity Hospital, and also on the manikin with its infant cadaver. The signs and symptoms of pregnancy are studied at the bedside; and the progress of labor carefully observed by the student, an accurate report of which is required at the completion of each case.

#### OPHTHALMOLOGY AND OTOTOLOGY

These subjects are presented in a most practical manner and are amply illustrated by cases from the hospital and eye and ear infirmary. Students are taught the use of the ophthalmoscope and other instruments of diagnosis by personal experience, and are given opportunities to diagnose cases and to assist in the various operative treatment.

#### GYNECOLOGY AND PÆDIATRICS

The teaching in these subjects is abundantly illustrated, and students are given the opportunity of acquiring personal experience in the use of instruments, in examining patients, and in treatment and operations.

#### PHYSIOLOGY

This branch is taught by lectures, recitations, charts, photographic projections with projecting apparatus, microscopical and anatomical preparations, experiments in physiological chemistry, and demonstration by vivisection upon the lower animals.

#### MEDICAL JURISPRUDENCE

In this department, students are taught not only the duties of medical witnesses, but their special rights and privileges as well. Much care is taken in teaching the proper methods of observation in that class of cases where the relations of the two professions of law and medicine blend, and this one cardinal thought is never lost sight of, namely, that "medical jurisprudence is the prudent foreseeing of legal rights from a medical standpoint; the application of all the various branches of medical learning to the solution of vexed or disputed questions at law."

#### NERVOUS DISEASES AND INSANITY

In this course a wide range of clinical cases is introduced. These subjects are of growing importance to the physician, and the latest discoveries will be succinctly presented.

## GENERAL CHEMISTRY

This course is for the first year students, and is designed to present as much of the subject as will be needed by the physician.

Much time is devoted to laboratory work. The student is here made familiar with all the methods of chemical manipulation by actual experiment.

## SURGERY

In this department is presented a systematic course of lectures and recitations covering surgical pathology, antisepsis, the principles of surgery, special surgical diseases and operations. Bedside studies and the operation room give the student unusual opportunities for acquiring an extended knowledge of symptoms, diagnosis and treatment in this attractive field.

## ANATOMY

This branch of medical study is taught entirely by demonstrations on the dissected body and by recitations. A printed outline, giving a practical description of the anatomy comprised in the next demonstration, is supplied to each member of the class, and such a thorough drilling is combined with this discussion that an understanding of the entire anatomy can be arrived at with great ease and certainty.

## MATERIA MEDICA AND THERAPEUTICS

This branch is taught by lectures and examinations, illustrated by a well selected cabinet of crude drugs and officinal preparations. Special attention is also given to therapeutics, and to the latest advances made in that department.

## MEDICAL CHEMISTRY AND TOXICOLOGY

By means of didactic lectures the student is made familiar with the chemistry of the human body in health and disease, together with the symptoms and best treatment in cases of poisoning. In the laboratory a thorough course in urinalysis and toxicology is given the students.

## LARYNGOLOGY

The various affections of the upper air passage, including the nose and throat, are presented, and students are taught the use of the laryngoscope, rhinoscope, and other instruments, together with the proper methods of treatment.

## HYGIENE

The principles of sanitary science are carefully discussed. The deep interest which is now manifested in this subject justifies the attention which is given it by this school.

## LABORATORY WORK

The laboratories are open daily during the course, and students are required to engage largely in experimental work in chemistry, microscopy, physiology and pathology.

In the histological laboratory the student is made acquainted with the technique of the microscope.

The pathological laboratory offers excellent facilities for the preparation and examination of diseased tissues.

The subject of micro-organisms receives due attention, and is illustrated by the microscope and by laboratory experiments.

Special attention is given to the teaching of anatomy, and the best European methods are adopted. Students are required to devote at least two terms to practical anatomy, and to dissect at least an entire body during the time.

## CLINICAL INSTRUCTION

Clinical instruction is co-ordinated with didactic lectures.

In addition to the regular clinics, the plan of forming ward classes which has been adopted by the faculty will be continued. By this method a few students at each time, in regular succession, accompany an instructor in the wards of the hospitals and at the various dispensary services, to witness and take part in the examination and treatment of cases.

The most important and valuable clinical resources of Buffalo are at the command of the faculty of the medical department of Niagara University. They embrace the Buffalo Hospital of the Sisters of Charity, the Emergency Hospital, the Buffalo Maternity Hospital, St Francis' Hospital, the Good Samaritan Eye and Ear Infirmary, the Buffalo Medical and Surgical Dispensary, German Orphan Asylum and other charitable institutions.

*Buffalo Hospital of the Sisters of Charity*—This is a general hospital, the largest in Buffalo, and is under the management of the Sisters of Charity. It affords opportunity to study almost every variety and condition of disease and injury.

Its wards are under the direct charge of the faculty of this school. Clinics and ward-visits are given regularly.

*Buffalo Maternity Hospital* — This hospital, organized May 1886, is under the charge of Professor Lothrop and his assistant, Professor Frederick, with a corps of able consulting physicians and surgeons. It aims to provide an ample obstetric clinic for the students of the college.

*Other clinical instruction* — Cases for clinical instruction are also available in other hospitals of Buffalo, of which the following are under the supervision of members of the faculty: St Francis' Hospital, Emergency Hospital, Good Samaritan Eye and Ear Infirmary, Buffalo Medical and Surgical Dispensary and German Orphan Asylum.

## SYNOPSIS OF STUDIES

### *First year*

*Didactic lectures* — Anatomy, physiology, general chemistry and physics, materia medica.

*Practical work* — Dissection, microscopy and normal histology, chemistry.

### *Second year*

*Didactic lectures* — Anatomy, physiology, medical chemistry, hygiene, pharmacology and therapeutics, pathology, obstetrics, medicine, surgery.

*Practical work* — Dissection, medical chemistry, pathological histology.

*Clinical lectures* — Medicine, surgery, obstetrics.

*Practical clinical work* — General medicine, general surgery, obstetrics.

### *Third year*

*Didactic lectures* — Surgical and regional anatomy, special therapeutics, obstetrics, medicine, surgery, gynecology and diseases of children, diseases of the eye, ear and throat, diseases of the nervous system and mind, medical jurisprudence, orthopedy and dermatology.

*Clinical lectures* — Medicine, surgery, special branches, obstetrics.

*Practical clinical work* in the same.



*Practical demonstrations* on the cadaver in: surgical anatomy, operative surgery.

In the four years' curriculum the last course is devoted to the special branches and clinical work.

## REQUIREMENTS FOR GRADUATION

The candidate for the degree of doctor of medicine must be 21 years of age.

He must have studied medicine at least three years, must be of good moral character, and present satisfactory evidence of the same.

He must have attended at least three full courses of medical lectures, the last of which must be at this school, and no two of which shall have been either begun or completed within the same calendar year. No period of study or practice will be allowed as an equivalent for a course of lectures.

He must have pursued and completed the branches and course of study embraced in the curriculum of this school.

He must make application to the secretary for final examination at least one month before the close of the winter term, the application to be accompanied by the graduation fee, if not previously paid.

He must pass satisfactory final examinations before the faculty and the board of examiners. Examinations will be both written and oral.

No thesis is required of the candidate for the degree of doctor of medicine.

## BUILDINGS

Main building, four story brick and stone, built 1884, floor area 64,000 sq. ft., five class rooms, 225 seats, value \$10,000.

## ADDITIONAL INFORMATION

In our progress to greater usefulness we have had a perpetual scholarship of the annual value of \$75, established by the chancellor, the Rt Rev. S. V. Ryan, and we are building an addition to the college that will afford greater facilities for teaching, and add at least \$10,000 more to the value of the property.

# NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

226 E. 20 st. New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
25 My	1886	Legislature incorporated New York Post-Graduate Medical School and Hospital with no power to grant degrees.

## DIRECTORS

President, D. B. St John Roosa, M. D., LL. D.  
 Treasurer, L. Bolton Bangs, M. D.  
 Secretary, W. Oliver Moore, M. D., D. V. S.  
 Bache McE. Emmet, M. D.  
 George H. Fox, B. A., M. D.  
 Clarence C. Rice, M. D.  
 James L. Skillin, B. A.  
 Andrew H. Smith, M. A., M. D.

## APPOINTED DURING YEAR

Seneca D. Powell, M. D.

## VACANCIES

Thomas E. Satterthwaite, M. D.  
 Frederic R. Sturgis, M. D.

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. Post-Graduate.

1882 President, D. B. St John Roosa, M. D., LL. D.

M. A. Yale; M. D. University of the City of New York; LL. D. University of Vermont; Professor of diseases of the eye and ear, University of the City of New York 1869-82; Professor of diseases of the eye and ear, University of Vermont 1874-80; Surgeon, Manhattan Eye and Ear Hospital; President Medical Society of the State of New York; Author Treatise on the ear, Old hospital and other papers, with Dr Edward I. Ely, Ophthalmic and otological memoranda, Vest pocket medical lexicon; Translator and editor (with Dr C. E. Hackley and Dr C. S. Ball) Trölsch on the ear and Stellway on the eye.

Vice-President, Thomas E. Satterthwaite.

1889 Treasurer, L. Bolton Bangs, M. D., 31 E. 44 st.

Surgeon, St Luke's and Charity Hospitals.

1885 Secretary, Clarence C. Rice, M. D., 123 E. 19 st.

M. D. College of Physicians and Surgeons 1877; Consulting surgeon in throat diseases, out-door department, Bellevue Hospital; Visiting physician, New York Infant Asylum; Laryngologist, Montefiore Home; Member New York State Medical Society, American Laryngological Society.

House Surgeon, Fred W. Powell, M. D.

First Assistant to the house surgeon, F. A. Sweet, M. D.

Second Assistant to the house surgeon, B. W. Brown, M. D.

Apothecary, Christian A. Henrichsen.

Superintendent, F. Eugene Farrell.

Matron, Emily A. Bedell.

### INSTRUCTION

Figures in column at left give first year of service in N. Y. Post-Graduate and years spent in teaching.

1882 D. B. St John Roosa, M. D., L. L. D. President and Professor of the Diseases of Eye and Ear.

See also "Administration."

Frederic R. Sturgis, M. D. Professor of Diseases of the Genito-Urinary Organs, and of Venereal Diseases.

Surgeon to the Charity Hospital.

Thomas E. Satterthwaite, M. D. Professor of Pathology and General Medicine.

Pathologist, Orthopedic Hospital; Consulting physician, Northwestern Dispensary.

1883 Charles Loomis Dana, M. A., M. D. Professor of Diseases of the Mind and Nervous System, 50 W. 46 st.

B. A. Dartmouth 1872, M. A. 1875; M. D. College of Physicians and Surgeons 1877; Physician, Bellevue Hospital; Neurologist, New York Infant Asylum, Montefiore Home for Chronic Invalids; Member Association of American Physicians, American Neurological Association.

1883 Andrew H. Smith, M. A., M. D. Professor of Clinical Medicine and Therapeutics, 22 E. 42 st.

M. D. College of Physicians and Surgeons 1858; M. A. Union 1859; Attending physician, Presbyterian Hospital; Consulting physician, Orthopedic and St Luke's Hospitals; Corresponding member Gesellschaft für Heil Kunde; Author Treatise on effects of compressed air, 1873, Treatise on diabetes, 1889.

- 1888 William Oliver Moore, M. D. Professor of Diseases of the Eye and Ear.

Professor of diseases of the eye and ear, Woman's Medical College, University of Vermont; Ophthalmic surgeon, Orphans' Home and Asylum.

See also Woman's Medical College.

- Ambrose L. Ranney, M. D. Professor of the Anatomy and Physiology of the Nervous System.

- Bache McE. Emmet, M. D. Professor of Diseases of Women.

Assistant surgeon, New York State Woman's Hospital.

- 1884 Edward Kershner, M. D. Professor of Naval, Military and  
7 State Hygiene, 1 E. 39 st.

M. D. University of the City of New York 1861; Assistant surgeon, U. S. Navy 1861; Passed assistant surgeon, U. S. Navy 1863; Surgeon, U. S. Navy 1872.

- George Henry Fox, M. D. Professor of Diseases of the Skin.

See also College of Physicians and Surgeons.

- 1882 William Henry Porter, M. D. Professor of Pathology and  
12 Clinical Medicine, 1674 Broadway.

M. D. College of Physicians and Surgeons 1877; Professor of surgical pathology, Columbia Veterinary College 1880-83; Curator, Presbyterian Hospital 1878-90; Acting curator, Bellevue Hospital 1885-88; Pathologist, Northeastern Dispensary 1889-; Consulting physician, Long Island City Dispensary; Author of medical articles and papers.

- 1882 Stephen Smith Burt, M. A., M. D. Professor of Physical  
8 Diagnosis and Clinical Medicine, 37 W. 32 st.

M. D. College of Physicians and Surgeons 1875; M. A. Yale 1890; Instructor physical diagnosis, New York Post-Graduate Medical School and Hospital 1882-84; Professor of thoracic diseases, University of Vermont 1884-85; Member Medical Society of the State of New York; Author Exploration of the chest in health and disease, and of many medical papers.

- Seneca D. Powell, M. D. Professor of Clinical Surgery.

Surgeon, St Elizabeth's Hospital, New York Infant Asylum.

- C. A. von Ramdohr, M. D. Professor of Obstetrics.

Physician, German Poliklinik, Association Hospital.



- 1885 Horace Tracy Hanks, M. D. Professor of Diseases of  
16 Women, 766 Madison av.

M. D. Albany Medical College 1861; Lecturer on obstetrics, Dartmouth Medical College 1879; Instructor of diseases of women, Demilt Dispensary 1875-84; Surgeon, Woman's Hospital; Member American Medical Association, New York State Medical Society, American Gynecological Society, British Gynecological Society, Connecticut River Valley Medical Society; Author of many medical articles and papers.

- 1885 Lewis S. Pilcher, M. D. Professor of Clinical Surgery, 145  
15 Gates av., Brooklyn.

B. A. University of Michigan 1862, M. A. 1863, M. D. 1866; Lecturer on anatomy, Long Island College Hospital 1872-79; Adjunct professor of anatomy 1880-82; Surgeon, Methodist Episcopal Hospital, Brooklyn; Member New York State Medical Society; Author Treatise on the treatment of wounds; Editor Annals of surgery.

- 1886 Henry J. Garrigues, M. D. Professor of Obstetrics, 155  
Lexington av.

B. A. University of Copenhagen 1850, M. A. 1863, M. D. 1869; Visiting obstetric surgeon, Maternity Hospital; Consulting obstetrician, Infant Asylum; Gynecologist, St Mark's Hospital; Fellow American Gynecological Society; Author On gastro-elytrotomy, 1878, Diagnosis of ovarian cysts by means of the contents, 1878, Practical guide in antiseptic midwifery, 1886, Development of the female genitals in American system of gynecology, 1887, Malformation of the female genitals, 1887, Puerperal infection in American system of obstetrics, 1889, Inflammation of the breasts and allied diseases, 1889.

- 1885 Clarence C. Rice, M. D. Professor of Diseases of the  
.6 Throat and Nose, 123 E. 19 st.

See also "Administration."

- 1884 Charles Carroll Lee, M. D. Professor of Diseases of Women,  
4 79 Madison av.

B. A. Mt St Mary's College 1856, M. A. 1859, LL. D. 1890; M. D. University of Pennsylvania 1889; Consulting surgeon, Woman's Hospital; Consulting surgeon in gynecology, Charity Hospital; Physician, New York Foundling Asylum; Member American Academy of Medicine and American Gynecological Society.

1883 Jonas Rein Nilsen, M. D. Professor of Diseases of Women,  
7 9 E. 53 st.

M. D. College of Physicians and Surgeons 1880; Assistant to chair of diseases of women, New York Post-Graduate Medical School 1883-85, Associate professor 1885-87, Professor 1887.

Graeme M. Hammond, M. D. Professor of Diseases of the Mind and Nervous System.

Member American Neurological Association, New York State Medical Association; Editor Journal of nervous and mental diseases 1888-89.

George B. Fowler, M. D. Professor of Clinical Medicine and Medical Chemistry.

Attending physician, Bellevue Hospital.

1887 Robert Abbe, M. D. Professor of Clinical Surgery.

6 B. A. College of the City of New York 1870; M. D. College of Physicians and Surgeons 1874; Surgeon, out patient department, New York Hospital 1877-84; Professor of surgery, Woman's Medical College 1886-88; Surgeon, St Luke's Hospital 1884- .

1884 Henry Dwight Chapin, M. D. Professor of Diseases of  
8 Children.

B. S. Princeton 1877, M. A. 1884; M. D. College of Physicians and Surgeons 1881; Professor of diseases of children, Woman's Medical College of the New York Infirmary 1885-90; Physician, Demilt Dispensary.

A. M. Phelps, M. D. Professor of Orthopedic Surgery.

7 M. D. University of Michigan 1873; Professor of surgery, University of Vermont 1884- ; Professor of orthopedic surgery, University of the City of New York; Surgeon, Charity Hospital; Consulting surgeon, Mary Fletcher Hospital; Member American Orthopedic Association, New York State Medical Society; Representative University of Vermont in eighth and 10th International Congress Copenhagen and Berlin 1884-90; Author Phelps' operation for club foot; Phelps' lateral traction fixation, hip special, What produces and what prevents ankylosis, Phelps' operation for hare lip, Transplantation from lower animals to man.

1887 A. D. Rockwell, M. 'D. Professor of Electro-therapeutics,  
4 113 W. 34 st.

M. D. Bellevue Hospital Medical College 1864; M. A. Kenyon College 1868; Author (with Dr George M. Beard) Practical treatise on medical and surgical electricity, 1876, Sexual neurasthenia, its hygiene, causes, symptoms and treatment, 1886, Practical treatise on nervous exhaustion, 1889, Use of electricity in medicine and surgery, 1879.

- 1889 L. Bolton Bangs, M. D. Professor of Diseases of Genito-  
15 Urinary Organs and of Venereal Diseases, 31 E. 44 st.  
See also "Administration."

- 1887 Peter A. Callan, M. D. Professor of Diseases of the Eye,  
17 35 W. 38 st.

Surgeon, New York Eye and Ear Infirmary; Ophthalmic surgeon, St Vincent's Hospital; Consulting ophthalmic surgeon, Foundling Asylum, Colored Orphan Asylum; Consulting surgeon and president medical board, St Joseph's Hospital, Yonkers.

- 1887 Orlando Benajah Douglas, M. D. Professor of Diseases of  
5 the Nose and Throat, 123 E. 36 st.

M. D. University of the City of New York; Director and surgeon, Manhattan Eye and Ear Hospital, throat department; Member State Medical Society.

Joseph O'Dwyer, M. D. Professor of Diseases of Children.

R. W. Taylor, M. D. Professor of Diseases of the Skin.

- J. B. Emerson, M. D. Professor of Diseases of the Eye and  
10 Ear, 20 E. 30 st.

M. D. University of Vermont 1876, Bellevue Hospital Medical College 1883; Assistant to chair of ophthalmology and otology, Medical Department, University of Vermont 1882- ; Surgeon, Manhattan Eye and Ear Hospital; Attending physician, Northern Dispensary 1881-83; Consulting surgeon, Englewood (N. J.) Hospital; Member American Ophthalmological and American Otological Societies.

- 1889 John H. Ripley, M. D. Professor of Diseases of Children,  
21 605 Lexington av.

Teacher of surgery, Medical Department, University of the City of New York 1869-71; Clinical lecturer on diseases of children 1871-76; Professor of diseases of children, New York Polyclinic 1882-84; Surgeon, Charity Hospital; Visiting physician, St Francis Hospital; Consulting physician, Hospital for Ruptured and Crippled.

- 1888 Frederick Bagoë, Ph. B. Professor of Pharmacology.  
3 Ph. B. University of Copenhagen 1869.

- 1886 Francis Valk, M. D. Instructor in Diseases of the Eye,  
6 163 E. 37 st.

Assistant demonstrator of anatomy, Medical Department, University of the City of New York 1879-80; Ophthalmic and aural surgeon, New York Dispensary 1880- ; Visiting physician, Randall's Island Hospitals 1885-86; Assistant surgeon, Manhattan Eye and Ear Hospital 1883-87; Author Errors of refraction.



- 1883 William M. Leszynsky, M. D. Instructor in Mental and  
8 Nervous Diseases, 61 E. 75 st.

M. D. University of the City of New York 1878; Attending neurologist, Mt Sinai Hospital Dispensary; Attending physician, Demilt Dispensary (nervous department); Visiting physician, Hebrew Shelter Orphan Asylum; Member American Neurological Association.

- G. R. Elliott, M. D. Instructor in Mind and Nervous Diseases.

- William A. Dayton, M. D. Instructor in Diseases of the Ear.

Assistant surgeon, Manhattan Eye and Ear Hospital; Surgeon, Brooklyn Throat Hospital.

- 1882 Samuel Lloyd, M. D. Instructor in Clinical and Operative  
6 Surgery, 24 W. 50 st.

B. S. Princeton 1882; M. D. University of Vermont 1884, College of Physicians and Surgeons 1885; Member New York State Medical Society.

- 1882 Frank B. Carpenter, M. D. Instructor in Diseases of the  
8 Skin, 17 E. 38 st.

B. A. Williams 1878; M. D. University of the City of New York 1881; Attending surgeon, Out-door department Bellevue Hospital; Dermatologist, Demilt Dispensary; Physician and surgeon, Charity Hospital 1881-82.

- A. F. Currier, M. D. Instructor in Diseases of Women.

Attending surgeon, Out-door department, Bellevue Hospital.

- 1884 Reynold W. Wilcox, M. A., M. D. Professor of Clinical  
7 Medicine, 690 Madison av.

B. A. Yale 1878; M. A. Hobart 1881; M. D. Harvard 1881; Assistant visiting physician, Bellevue Hospital; Physician, Demilt Dispensary; Fellow American Academy of Medicine; Editor A system of case records, 1886.

- 1888 Daniel Lewis, M. D. Professor of Special Surgery (Cancer-  
3 ous Diseases), 249 Madison av.

B. A. Alfred University 1869, M. A. 1872, Ph. D. 1886; M. D. College of Physicians and Surgeons 1871; Surgeon, Skin and Cancer Hospital; Member Medical Society State of New York; Fellow American Academy of Medicine.

- R. B. Talbot, M. D. Instructor in Diseases of Women.

Assistant surgeon, Woman's Hospital; Attending gynecologist, Demilt Dispensary.



1889 A. Palmer Dudley, M. D. Instructor in Diseases of Women.

M. D. Dartmouth Medical College 1877; Demonstrator of anatomy, Maine Medical School 1878-80; Interne, Woman's Hospital 1881-82; Gynecologist, Northeastern Dispensary, Randall's Island Hospital; Member Maine Medical Association, New York State Medical Society, American Medical Society, American Gynecological Society, Author of many gynecological papers.

1882 James K. Crook, M. D. Instructor in Clinical Medicine and  
8 Physical Diagnosis.

Author of medical papers and reviews.

Wendell C. Phillips, M. D. Instructor in Diseases of the  
Nose and Throat.

Assistant surgeon, Manhattan Eye and Ear Hospital (throat department).

H. Draper Speakman, M. D. Instructor in Diseases of the  
Eye.

Clinical assistant, Manhattan Eye and Ear Hospital.

W. A. Shufelt, M. D. Instructor in Clinical Medicine.

Assistant attending physician, New York Hospital, Out-door department.

1886 James E. Nichols, M. D. Instructor of Diseases of the  
5 Throat and Nose, 456 Lexington av.

B. A. University of Rochester 1878; Assistant surgeon, Manhattan Eye and Ear Hospital.

1887 W. E. Bullard, M. D. Instructor in Diseases of Women and  
4 Operative Gynecology, 112 E. 40 st.

M. D. Dartmouth Medical Department 1872, College of Physicians and Surgeons 1874.

John H. Girdner, M. D. Instructor in Surgery.

1886 George G. Van Schaik, M. D. Instructor in Clinical  
4 Medicine.

M. D. College of Physicians and Surgeons 1884; Pathologist and attending physician, French Hospital.

1888 Frank N. Lewis, M. D. Instructor in Diseases of the Eye,  
3 27 W. 31 st.

B. A. University of Vermont 1879, M. A. and M. D. 1882; Assistant surgeon, Manhattan Eye and Ear Hospital.

- 1888 W. B. De Garmo, M. D. Professor of Special Surgery  
6 (Hernia), 56 W. 36 st.

M. D. University of the City of New York 1875; Instructor in surgery, New York Polyclinic 1885- ; Instructor in surgery, New York Post-Graduate Medical School 1888-90; Professor of special surgery, 1890- ; Member New York State Medical Society, American Medical Association.

- 1888 Ralph Waldo, M. D. Instructor in Diseases of Women, 72  
4 W. 45 st.

M. D. University of the City of New York 1882; Visiting physician, Out-door department, Bellevue Hospital; Member Medical Society of the State of New York.

- 1889 Robert T. Morris, M. D. Instructor in Clinical Surgery.

2 Operator, St Elizabeth's Hospital; Consulting surgeon, Woman's Hospital of Brooklyn; Member American Medical Association, American Association of Gynecologists and Obstetricians; Associate editor New England medical monthly; Author How we treat wounds to-day.

- 1887 Willy Meyer, M. D. Instructor in Clinical Surgery, 700  
6 Madison av.

M. D. University of Bonn 1880; Attending surgeon, German Hospital, New York Skin and Cancer Hospital; Clinical professor of surgery, Woman's Medical College.

- 1889 C. W. Cutler, M. S., M. D. Instructor in Dermatology.

2 B. S. Rutgers 1879, M. S. 1882; M. D. College of Physicians and Surgeons 1882; Dermatologist and physician in chief, New York Dispensary; Member American Dermatological Society; Author Differential medical diagnosis, Differential diagnosis of the diseases of the skin, Essentials of physics and chemistry; Associate editor Epitome of medicine.

Hobart Cheesman, M. D. Instructor in Venereal and Genito-Urinary Diseases.

- 1888 F. Kanmerer, M. D. Instructor in Clinical Surgery.

4 M. D. University of Freiburg 1880; Surgeon, German Hospital, St Francis Hospital; Member German Surgical Society.

- 1888 J. H. Linsley, M. D. Demonstrator in Clinical Microscopy  
7 and Bacteriology, 39 Gramercy park.

M. D. University of Vermont 1880; Professor of pathology and bacteriology, University of Vermont 1890; Pathologist, New York Infant Asylum; Member 10th International Medical Congress 1890, Vermont Medical Society; Author Hand book of Uroscopy, 1882.

George E. Albott, M. D. Instructor in Diseases of Women.

Attending physician, Presbyterian Hospital Dispensary.

1887 W. H. Bates, M. D. Instructor in Diseases of the Eye, 131  
10 W. 56 st.

Assistant surgeon, Eye and Ear Infirmary.

1889 F. Tilden Brown, M. D. Instructor in Surgery.

2 B. A. Harvard; M. D. College of Physicians and Surgeons 1880;  
Attending surgeon, St Bartholomew's Hospital.

1888 E. C. Titus, M. D. Instructor in Diseases of Children, 153  
2 W. 10 st.

B. S. University of the City of New York 1880, M. D. 1884; Clinical assistant, University of the City of New York, department diseases of children 1884-87; Attending physician, Northern Dispensary 1887- .

H. J. Boldt, M. D. Instructor in Diseases of Women, 245  
W. 42 st.

Assistant to chair of gynecology, Medical Department, University of the City of New York 1879-81; Gynecologist, German Polyklinik; Surgeon, St Mark's Hospital; Member American Gynecological Society, British Gynecological Society; Author of many papers on gynecological subjects.

1887 Adolph Zeh, M. D. Instructor in Clinical Medicine and  
2 Physical Diagnosis, 343 W. 50 st.

B. A. College of the City of New York 1884; M. D. College of Physicians and Surgeons 1887; Interne, German Hospital 1887-89; Clinical assistant, New York Post-Graduate 1887-89; Instructor in clinical medicine 1889- .

1888 Abbott C. Combes, M. D. Instructor in Diseases of the  
3 Mind and Nervous System.

H. S. Clark, M. D. Instructor in Electro-Therapeutics.

1889 Joseph B. Bissell, M. D. Instructor in Venereal and Genito-  
Urinary Surgery, 37 W. 50 st.

Ph. B. Yale 1879; M. D. College of Physicians and Surgeons 1883; Instructor in surgery, New York Polyklinik 1887-89; Attending surgeon, Out-door department Bellevue Hospital.

1890 A. T. Swan, M. D. Instructor in Venereal and Genito-  
2 Urinary Diseases, 317 E. 18 st.

- 1889 John Dorming, M. D. Instructor in Diseases of Children,  
7 252 W. 25 st.  
Attending physician, Demilt Dispensary; Visiting physician,  
St Joseph's Hospital; Member American Pædiatric Society,  
New York State Medical Society.
- F. M. Wilson, M. D. Instructor in Diseases of Eye and Ear.  
Assistant surgeon, Manhattan Eye and Ear Hospital.
- 1890 John Aspell, M. D. Instructor in Diseases of Women, 438  
1 Lexington av.  
B. A. St John's College (Fordham) 1882; M. D. Bellevue Hos-  
pital Medical College 1885.
- Charles A. Powers, M. D. Instructor in Surgery.  
M. D. College of Physicians and Surgeons 1883; Surgeon, New  
York Hospital Out patient department; Assistant surgeon,  
New York Cancer Hospital.
- Herbert M. King, M. D. Instructor in Diseases of Nose and  
Throat.  
Clinical assistant, Manhattan Eye and Ear Hospital.
- Reuben Jeffrey, M. D. Instructor in Diseases of Nose and  
Throat.  
Attending physician, Brooklyn Throat Hospital.
- L. A. McClelland, M. D. Instructor in Diseases of the Ear.  
Attending physician, Brooklyn Throat Hospital.
- W. P. Wilkin, M. D. Instructor in Diseases of Mind and  
Nervous System.
- 1887 F. N. Patterson, M. D. Instructor in Clinical Medicine, 126  
2 E. 34 st.  
Assistant in gynecology, Demilt Dispensary.
- 1887 Abram Mills Fanning, jr, M. D. Instructor in Otology, 41  
4 W. 126 st.  
M. D. College of Physicians and Surgeons 1886; Ophthalmic  
and aural surgeon, New Amsterdam Eye and Ear Hospital,  
Harlem Dispensary; Assistant ophthalmic and aural surgeon,  
Manhattan Eye and Ear Hospital; Member State Medical  
Society; Translator Guy de Maupassant's Bel-ami.
- 1888 A. C. Griffin, M. D. Instructor in Special Surgery (Hernia),  
1 Whitestone.  
M. D. Albany Medical College 1880, College of Physicians and  
Surgeons 1881; Clinical assistant, New York Post-Graduate  
Medical School 1888-90; Instructor in special surgery 1890- .



## CLINICAL ASSISTANTS

C. S. Benedict, M. D.	J. H. Gunning, M. D.
George S. Thompson, M. D.	J. A. Nichols, M. D.
F. E. Sylvester, M. D.	S. I. Roome, M. D.
C. E. Denison, M. D.	J. Conger Bryan, M. D.
S. F. Hallock, M. D.	J. E. Coles, M. D.
F. J. Levisur, M. D.	Wales L. Cary, M. D.
George Waldo Crary, M. D.	Thomas C. Craig, M. D.
Frank Churchill, M. D.	George H. Donahue, M. D.
Stuart Douglas, M. D.	S. S. Graber, M. D.
Albert Frey, M. D.	J. M. Kennedy, M. D.
O. C. Ludlow, M. D.	E. H. Lines, M. D.
T. Halsted Myers, M. D.	J. H. Mennen, M. D.
M. Beattie, M. D.	A. Sturmdorf, M. D.
A. M. Fanning, M. D.	R. L. Watkins, M. D.
R. N. K. W. Horner, M. D.	Edward R. Wagner, M. D.
M. L. Warrin, M. D.	Daniel Weisner, M. D.
John R. Wright, M. D.	F. D. Skeel, M. D.
Arthur W. Johnson, M. D.	R. Kalish, M. D.
Joseph Bloodgood, M. D.	H. S. Oppenheimer, M. D.
F. M. Hillyer, M. D.	T. J. Kearney, M. D.
R. F. Howe, M. D.	Walter L. Carr, M. D.
Lorin A. Walker, M. D.	F. C. Combes, M. D.
R. O. DuBois, M. D.	Francis Foerster, M. D.
James A. Smeallie, M. D.	C. J. Musgrave, M. A., M. D.
J. Ladd, M. D.	Parker Syms, M. D.
William L. Russell, M. D.	C. F. Obermüller, M. D.
Henry B. Douglass, M. D.	Hervey W. Whitaker, M. D.
F. C. Husson, M. D.	T. C. Adams, M. D.
Henry B. Delatour, M. D.	T. J. Mooney, M. D.
Frederick O. Lloyd, M. D.	Arnot Spence, M. D.
W. C. Gilley, M. D.	C. H. Culver, M. D.
Jesse Hedden, M. D.	E. J. Gallagher, M. D.

## VACANCIES

Emil Neumer, M. D. Died O 1890.

## APPOINTED DURING YEAR

L. Duncan Bulkley, M. D.  
 Frank Ferguson, M. D.

James E. Kelley, M. D.

Charles B. Kelsey, M. D.

Charles H. Knight, M. D.

#### PROMOTIONS

##### In title alone

W. B. De Garmo, M. D. Professor of special surgery, from instructor in the same.

J. B. Emerson, M. D. Professor of diseases of eye and ear, from instruction in the same.

Daniel Lewis, M. D. Professor of special surgery, from (not reported).

J. H. Linsley, M. D. Demonstrator of clinical microscopy and bacteriology, from instructor in the same.

Joseph O'Dwyer, M. D. Professor of diseases of children, from (not reported).

Reynold W. Wilcox, M. D. Professor of clinical medicine, from instructor in the same.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

#### REQUIREMENTS FOR ADMISSION

See table 3.

#### COURSES OF STUDY

**Pathology, physical diagnosis, clinical medicine and therapeutics, and medical chemistry**

Professor Satterthwaite holds a medical clinic at the school. This course embraces a complete review of physical diagnosis and clinical medicine, so far as it can be illustrated by living material. Diseases of the heart, lungs, abdominal cavity and of the kidneys receive special attention.

#### NORMAL AND PATHOLOGICAL HISTOLOGY AND BACTERIOLOGY

The course embraces a thorough study of the simple tissues, and of the principal organs of the body in health and disease; the matriculates are taught the most approved methods of cutting, staining and mounting specimens for permanent preservation.

The culture and staining of different bacilli are taught, also the microscopic examination of urinary sediments.

The course lasts three weeks. Matriculates are supplied with microscopes and most of the microscopical accessories.

#### CLINICAL MEDICINE, PATHOLOGY AND THERAPEUTICS

Dr Porter holds regular medical clinics in the amphitheatre on Monday and Wednesday.

The purpose of these clinics is to illustrate the etiology, pathology, symptoms, diagnosis, prognosis and treatment of diseased conditions by a closely combined study of the physiological laws governing the human mechanism; and by the pathological changes and their laws which cause these disturbances and give rise to the various symptoms characteristic of all morbid conditions.

The clinics are devoted chiefly to the study of the diseases of the liver, kidneys, alimentary canal, etc., special attention is given to the physiological action of drugs.

Dr Porter or his assistants holds post-mortem examinations at the various hospitals with which they are connected, and the material thus obtained is utilized in illustrating to the class the macroscopic and microscopic changes produced in the human economy as the result of a disturbance of the normal physiological processes.

#### CLINICAL MEDICINE AND THERAPEUTICS

Dr Andrew H. Smith holds a weekly clinic in the amphitheatre. He also gives clinical instructions in the wards of the Presbyterian Hospital, with which he is connected.

The instruction in this department embraces the diagnosis and treatment of disease, which is illustrated by the examination and treatment of patients.

Under the head of therapeutics is given the comparative action of medicines belonging to the same classes, with hints for the selection of remedies with a view to given effects. New drugs which have been tested and found valuable receive special attention.

#### CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS

Dr Burt holds a medical clinic on Tuesday and Thursday of each week. At his clinic special attention is given to the diagnosis of diseases of the thoracic and abdominal viscera by physical signs, as well as to the topographical anatomy and physiology of these organs and the physical signs found in health.

## CLINICAL MEDICINE AND MEDICAL CHEMISTRY

Dr Fowler gives instruction in this department at Bellevue Hospital and in the school.

The relation of this branch of medicine to renal disease and digestive disorders is fundamental, and this chair has been established in recognition of this fact and the special skill required in order to intelligently treat them. The course consists of laboratory lessons, wherein the chief chemical and physical characters of the blood, bile, milk, urine and digestive juices are shown, their pathological changes pointed out and their therapeutic management indicated. The physiology of nutrition is made an important feature.

## URINARY ANALYSIS

Dr Linsley holds a weekly clinic at the school on this subject, in which urinary sediments are illustrated by the microscope and by the projection on a screen of urinary sediment by means of the calcium light.

## DEMILT DISPENSARY

Dr R. W. Wilcox holds special clinics for sections of the class at this dispensary. The instruction here given forms a part of the course in clinical medicine.

## Surgery

Clinics in this department are given at the school by Drs Pilcher, Powell, Abbe and Lloyd; at St Luke's Hospital by Dr Abbe, at the New York Hospital by Dr Weir, and at the Presbyterian Hospital by Dr Briddon.

Members of this class have the opportunity of following the details of surgical treatment practiced in the wards of these hospitals as well as of witnessing the performance of surgical operations.

## CLINICAL AND OPERATIVE SURGERY

The large number of dispensary patients are utilized by Drs Pilcher, Powell, Abbe and Lloyd in their clinics at the school. Members of the class have an opportunity of personally examining the patients and in many instances of carrying out the treatment.

## ORTHOPEDIC SURGERY AND MECHANICAL THERAPEUTICS

Dr Phelps gives systematic and general clinical demonstrations in orthopedic surgery, illustrating these topics by an abundance of living material.



The practical demonstration of simple, cheap and effective apparatus and methods constitutes an important feature of the teaching.

#### CANCER AND ALLIED DISEASES

Dr Lewis gives clinical instruction once a week at the school on the nature and treatment of cancer and allied affections, and he also meets sections of the class at the Skin and Cancer Hospital.

#### OPERATIVE SURGERY

The course in this department consists of 12 lessons of two hours each. The members of the class conduct all operations under the direction of the instructor and his assistants.

The general principles of antiseptic surgery and their application to private practice are illustrated. The class is afforded every opportunity to familiarize themselves with the dressing of operative wounds. A portion of each course is devoted to the subject of gun-shot wounds, particularly to the latest methods of treating penetrating wounds of the abdomen, suture of the intestine, toilet of the peritoneum, etc.

#### Diseases of women

Morning clinics are held each week by Drs Emmet, Hanks, Lee or Nilsen. Clinics are also held in the afternoon or evening by Drs Currier, Talbot, Bullard, Waldo or Abbott.

Dr Lee holds one clinic every Saturday afternoon at the New York State Woman's Hospital.

Other opportunities are afforded the matriculates to witness operations in the hospital of the school, and at the Woman's Hospital, tickets being furnished the school by Dr Nicoll and Dr T. Addis Emmet to witness their operations.

#### Operative gynecology

This course comprises complete instruction in all the operations peculiar to the female genital and abdominal organs.

Each member of the class performs (under the direction of the instructor and his assistants) the following operations, viz.: laparotomy for the removal of tubes and ovaries, Alexander's operation, hysterorrhaphy, trachelorrhaphy, perineorrhaphy, operation for complete rupture, vesico-vaginal fistula, buttonhole operation (Emmet's), hysterectomy, vaginal or abdominal suture of the intestines, etc.

Special care is taken that the physician becomes both familiar with the best methods employed in operating and skilled in the use of instruments.

### Obstetrics

Dr von Ramdohr directs his special attention to obstetric operations and the proper indications for the same. Obstetric antisepsis, normal and abnormal mechanism, diagnosis of presentations and positions, etc. receive due attention.

The several operations are performed in the semi-weekly clinics, and in the supplementary evening course of Dr Neumer by each member of the class, with the aid of the Budin-Pinard manikin, female cadaver and normal fetus.

A small lying-in ward has just been opened in the Post-Graduate Hospital connected with the school, and offers additional advantages to the matriculates during the coming session.

Obstetric cases are given out to members of the class, and every assistance is given for the necessary operations on the living by the gentlemen connected with this chair.

Dr Garrigues gives practical courses in obstetrics at the Maternity Hospital from February 15 to May 15. Each course consists of 12 lessons.

### Diseases of children

Daily clinics are held in this department by Dr Chapin or Dr Ripley and their assistants, in which cases exemplifying the various diseases of infancy and childhood are exhibited. Abundant opportunity for a personal examination of all cases is afforded. Special attention is given to diagnosis and treatment. The babies' ward of the hospital, the dispensary of the school, the Demilt and Northern Dispensaries and the out-door department of Bellevue Hospital furnish ample material.

### INTUBATION OF THE LARYNX

A course upon intubation of the larynx is given by Dr Joseph O'Dwyer. The course consists of the insertion and withdrawing of tubes upon the larynx of the cadaver, a thorough drill as to details, together with information regarding necessary after-treatment.

### Diseases of the eye and ear

Ophthalmic and aural clinics are held daily at the Manhattan Eye and Ear Hospital, the New York Eye and Ear Infirmary or at the school.

On Friday evenings, Dr Lewis gives instruction in ophthalmoscopy at the Manhattan Eye and Ear Hospital. Special instruction on errors of refraction is not only given at all the clinics, but also on Thursday evenings at the Manhattan Eye and Ear Hospital by Dr Speakman. Opportunities for the use of the ophthalmoscope are also given at each clinic to a certain number of the class.

#### EXCLUSIVELY AURAL CLINICS

Otoscopy, with the use of the Eustachian catheter, Politzer's apparatus, and the general treatment of the Ear is taught by Dr Dayton at the school where he holds aural clinics.

#### OPERATIVE SURGERY OF THE EYE

Dr W. O. Moore gives instruction in this department on the cadaver and upon fresh eyes, so that all the operations may be performed by members of the class.

#### Diseases of the nose and throat

Daily clinics are held at the school either by Dr Rice, Dr Douglas, Dr Phillips, or Dr Nichols. Drs Douglas, Phillips and Nichols give instruction on Mondays, Wednesdays and Fridays at the throat department of the Manhattan Eye and Ear Hospital, and clinics are held three times a week in the throat-room of the outdoor department, Bellevue Hospital, by Dr Nichols. In addition to these, the throat department of the Demilt Dispensary and of the Roosevelt Hospital Dispensary are open to matriculates.

#### Venereal and genito-urinary diseases

Dr Sturgis and Dr Bangs give a course on venereal and genito-urinary diseases at the school during the winter session.

The instructors to the chair of venereal and genito-urinary diseases, Dr Cheesman and Dr Bissell, give instruction on these subjects during the summer term.

In addition to the general schedule of the regular winter term, there are separate courses of instruction in this branch, in which hospital and dispensary instruction plays an important part.

#### Diseases of the skin

Clinical instruction in dermatology is given daily at the school by the professor of this department and his assistants.



The abundant clinical material to be found at the school is supplemented, when necessary, by rare and interesting cases selected from the New York Skin and Cancer Hospital and other sources.

### Diseases of the mind and nervous system

Professor Charles L. Dana gives clinical lectures twice weekly upon the various forms of nervous disease. Regular demonstrations of normal and pathological brains and spinal cords, illustrating localization, etc., are also made. Special students who desire it are shown the general methods of microscopical study of the nervous system, also the acute and chronic nervous cases in Dr Dana's wards at Bellevue Hospital, and insane cases in the pavilion attached to the same institution.

Professor Graeme M. Hammond gives two clinical lectures each week upon diseases of the mind and nervous system. These lectures are demonstrated by abundant clinical material and by normal and pathological specimens. Dr A. C. Combes holds a special clinic once a week.

### SPECIAL CLASSES IN THE MICROSCOPICAL ANATOMY AND THE PATHOLOGY OF THE NERVOUS SYSTEM

Professor Dana has established a laboratory in which special courses are given upon the histological technique and microscopical anatomy of the nervous system. A full series of sections is made of nerve fibre, spinal cord, medulla and brain cortex, and the aniline, palladium-carmine, Weigert, Pal-Exner and Golgi methods of staining shown.

### INSTRUCTION IN MENTAL DISEASES

Dr Stuart Douglas, resident physician at the Insane Pavilion, Bellevue Hospital, gives special instruction in his department. The accessibility of the Pavilion and the very large number of cases constantly received there give to students an unusual opportunity for studying this class of cases.

### Electro-therapeutics

So far as is necessary to a clear understanding of the principles of electro-therapy, the physics and physiology of electricity are taught. Clinics are held and special attention given to the



methods of electrical application, as well as to the differential indications for the use of the several forms of electricity in the treatment of medical and surgical cases.

### **Anatomy and physiology of the nervous system**

Dr Ranney delivers courses of lectures on this branch during the term, from October to April of each year. Each course comprises 12 lectures. Particular attention is given to the later discoveries in this field, in so far as they may be applied to the diagnosis of nervous diseases. The theories of functional localization, with special reference to the determination of focal lesions of the brain and spinal cord, are taught, and the symptoms exhibited in the various forms of paralysis are explained by blackboard drawings, models and actual sections of the tissues. The clinical significance of pain in various parts of the body is discussed and interpreted from an anatomical standpoint. The function of the more important nerves is demonstrated before the class upon a living subject by means of electric currents.

### **Pharmacology**

In this department instruction is given in the art of prescribing, with special reference to the incompatibility of many drugs frequently employed in combination, and to the best methods of administering unpleasant drugs in a palatable form.

New remedies, dietetic preparations, and such modern pharmaceuticals as are of importance to the medical practitioner will receive special attention.

These lectures are in their nature object lessons, each subject being illustrated by exhibits and practical demonstrations.

### **Hygiene and practical sanitation**

The course embraces everything having relation to the health of man. It is illustrated with diagrams, models and appliances of various kinds.

It includes the consideration of soils in their relation to health and disease, and their influence on habitations.

Water, collection and examination, chemical and microscopical; distribution, impurities, and purification; diseases connected with water; the drainage of houses, etc. Air: examination, relations to health and disease. Ventilation, natural and mechanical. Food, quality and relative value; physical, chemical and microscopical

examination of articles of diet ; adulteration and diseases in relation to food. Habitations, location, construction, drainage, ventilation and warming; hospital construction and management; individual hygiene, disinfection, quarantine, management and prevention of epidemic diseases.

### BUILDINGS

One building, hospital and medical school, dispensary and laboratories, floor area 3,800 sq. ft, nine class rooms, 280 seats, value \$20,000.

### ADDITIONAL INFORMATION

A new bacteriological laboratory has been added, affording similar instruction to that given in the best laboratories of Europe.

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## COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

209-213 E. 23 st., New York

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1829	Organized and instruction commenced.
25 Ap	1831	Incorporated by legislature. Corporation to continue 25 years.
16 Ap	1832	Charter amended by enacting that after January 1, 1835, no person should be allowed to practice pharmacy in New York city, unless a graduate of this school or some other, or unless examined by censors of the County Medical Society.
20 Mr	1856	Charter made permanent by legislature.
20 Mr	1871	Charter amended. Limit for real estate increased from \$20,000 to \$100,000.

### TRUSTEES

Elected

President, Samuel W. Fairchild,

Ph. G ..... 82 Fulton st.

1890 First Vice-President, George

Massey ..... 68 William st.

## Elected

1890 Second Vice-President, William

L. Vennard..... 91 Fulton st.

1890 Third Vice-President, Thomas

F. Main, Ph. G..... 278 Greenwich st.

1890 Treasurer, Horatio N. Frazer... 208 Fifth av.

1890 Secretary, J. Niven Hegeman.. 1218 Broadway

1888 Hermon W. Atwood ..... 846 Broadway

1888 B. Frank Hays, Ph. G..... 561 Fifth av.

1888 Thomas J. Macmahan ..... 142 Sixth av.

1888 Charles Rice, Ph. D ..... Bellevue Hospital

1888 George B. Wray, Ph. G..... Yonkers

1889 Samuel J. Bendiner..... 47 Third av.

1889 Byron F. McIntyre, Ph. G..... 75 Walnut st., Orange, N. J.

1889 C. F. Schleussner, Ph. G..... 644 Bedford av., Brooklyn

1889 Henry Schmid, Ph. G ..... 38 av. A.

## APPOINTED DURING YEAR

1890 Gustavus Balser..... 137 av. B.

1890 John R. Caswell..... 578 Fifth av.

1890 Theodore Louis..... 112 av. A.

1890 Ewen McIntyre, Ph. G ..... 990 Sixth av.

1890 Albert A. Merritt, Ph. G ..... Ninth av. and 61 st.

1890 Domingo Peraza, Ph. G ..... 301 Third av.

## VACANCIES

George C. Close, vice-president, Brooklyn, term expired 30 Je 1890

David Hays, treasurer, Pleasantville, term expired 30 Je 1890

Henry J. Menninger, vice-president, Brooklyn, died S 1889

Emlen Painter, Brooklyn, died Ja 1890

## ADMINISTRATION

Figures in column at left give first year of service in College of Pharmacy.

1866 Chairman, Peter W. Bedford, Ph. G.

Educated at College of Pharmacy of the City of New York.

Treasurer, Horatio N. Frazer, 208 Fifth av.

1889 Secretary, Henry H. Rusby, M. D.

Clerk of College, O. J. Griffin.

## INSTRUCTION

Figures in column at left give first year of service in College of Pharmacy and years spent in teaching.

1868 Charles F. Chandler, Ph. D., M. D., LL. D., F. C. S. Pro-  
36 fessor of Organic Chemistry.

Educated at Union and Göttingen; Teacher at Union 1854- .

1866 Peter W. Bedford, Ph. G. President and Professor of  
Pharmacy.

See also "Administration."

1884 Arthur H. Elliott, Ph. D., F. C. S. Professor of Chemistry  
21 and Physics and Director of the Laboratories.

Educated at School of Mines, London, England and Columbia  
College School of Mines.

1889 Henry H. Rusby, M. D. Professor of Materia Medica and  
Botany.

1881 John Oehler, Ph. G. Instructor in Chemistry.

Educated at College of Pharmacy of the City of New York.

1890 Henry Kraemer, Ph. G. Instructor in Botany, Pharma-  
cognosy and Materia Medica.

Ph. G. Philadelphia College of Pharmacy 1889; Assistant in  
chemistry, University of Pennsylvania 1889-90.

1890 Frederic J. Wulling, Ph. G. Instructor in Pharmacy, 209  
5 E. 23 st.

Ph. G. College of Pharmacy of the City of New York 1887;  
Member New York State Pharmacal Association; Author of  
numerous articles for journals.

1890 G. A. Ferguson, Ph. B. Assistant in Chemistry and Physics,  
1 138 Wilson st. Brooklyn.

Ph. B. Columbia 1890.

## VACANCIES

Joseph Schrenk, M. A. Professor of pharmacognosy. Died  
Ja 1890.

George D. Hays, M. D., Ph. G. Instructor in materia medica  
and botany. Resigned Ap 1890.

Charles F. Heebner, Ph. G. Instructor in pharmacy. Resigned  
Ap 1890.



## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value.
Gold medal, John P. Arnold.....	\$45
Silver medal, Adolph Stierle, jr. ....	2
Bronze medal, William J. M. Robinson.	
Free scholarship, John P. Arnold .....	60

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

## ORGANIC CHEMISTRY

The lectures on organic chemistry are given to the senior class on Friday afternoons during the entire session. The nature and sources of organic bodies are discussed, followed by the general principles of synthesis, elementary analysis, empirical, proximate, molecular, and graphic formulæ, classification, etc. The systematic treatment of the different classes of organic bodies follows, the fatty compounds being first discussed, the aromatic compounds later. Besides the general statement of the history, occurrence, preparation and properties of the most important representatives of the different classes of organic compounds, attention is given to the practical applications, especially in the case of petroleum and its products, in the lectures on hydrocarbons; fermentation and fermented liquors in the discussion of alcohols; the fats, butter, etc., under the triatomic alcohols; glucose, sugar, etc., under the hexatomic alcohols. Coal-tar colors and new aromatic remedies are discussed under aromatic chemistry. The lectures are illustrated by specimens, diagrams and experiments.

## GENERAL CHEMISTRY

These lectures occupy a prominent part in the course of instruction. The general object being to render instruction practically useful, the several parts of the subject are treated more or less in detail, according to the degree of importance they possess to the pharmacist; all of them with as much amplitude as the limits of the course permit.

The fundamental principles of chemistry are presented, and each important element and its chief compounds carefully studied. The great chemical operations of nature are investigated — combustion, decay, fermentation and putrefaction; also the chemistry of vegetable and animal nutrition.

During the junior year the lectures are limited to the non-metallic elements and their compounds.

During the senior year the chemistry of the metals is studied in detail.

The chemical nature of poisons, antidotes, and methods for detecting them, are not neglected; though it is not possible to educate finished analytical chemists by means of didactic lectures. By availing themselves of the facilities offered at the laboratory of the college, students may pursue special courses in analytic chemistry.

The lectures include the pharmaceutical treatment of medicinal substances in manufactures and the laboratory, and their examination by practical analysis, illustrated by a series of instructive experiments. Particular attention is paid to the analysis, both organic and proximate, of organized material.

#### BOTANY AND MATERIA MEDICA

In this department effort is concentrated on such instruction as shall fit the post-graduate for his professional work, and here the student receives a thorough training. In addition to the ordinary lecturing auxiliaries of chart, model and lantern-slide, the college possesses many thousands of specimens illustrating each point of structure touched on in the lectures. As an additional aid, he is furnished with a number of flowers typically illustrating the subjects taught, which he is expected to dissect before the next lecture. At suitable hours the professor may be found in his room at the college, where the students are invited to meet him for special assistance on points wherein difficulties have been encountered.

In the study of materia medica the same method of instruction is followed as in botany. Each student is furnished during the lecture with samples of the principal drugs lectured on, and is thus enabled to familiarize himself with their gross appearances and properties. Photographs of medicinal plants and sections of drugs are also freely exhibited by means of the lantern. The

herbarium and cabinet of the college are at all times accessible to the students.

In the lectures on *materia medica* the drugs are arranged in the order of their botanical relationship, the arrangement given in Bentham & Hooker's *Genera plantarum* being followed.

In these lectures some general remarks on the orders, with special reference to the medicinal properties of their members, always precede the consideration of the species belonging thereto. In studying the different drugs the order of topics is as follows: the definition given by the pharmacopœia, habitat, description, important constituents, medicinal effects, preparations and their doses.

#### PHYSIOLOGY AND THE ACTION OF DRUGS

This course is provided for the junior students, and is designed to give them an intelligent idea of the various bodily functions and the manner in which these are influenced by the action of drugs. Attendance is optional, but as the lectures fully cover all the points connected with this subject on which the student is examined, it is believed that he can in no other way so readily prepare himself for graduation as by a regular attendance on the course.

#### THEORY AND PRACTICE OF PHARMACY

##### *Junior course*

This course is devoted entirely to the fundamental principles of pharmacy, its aims and purposes; to a general study of drugs, and to all the operations and means necessary to prepare the drugs for their use as medicines, and the dispensing of medicines. The more detailed and scientific study of the pharmaceutical preparations is left to the senior course.

The opening lectures give a survey of the whole field of pharmacy, its relation to other arts and sciences, and its essential principles as applied to the art of dispensing. A concise history and description of the pharmacopœias, dispensatories and textbooks are given in the introductory lectures.

The important study of metrology (weights measures, and specific gravity) follows.

The definition of the term drug from a pharmacopœial and commercial point of view is given, with a description of various methods for the selection, drying, garbling and preservation of vegetable and animal drugs.



The various uses of heat, in the manipulations of pharmacy (ebullition, solution, evaporation, exsiccation, calcination, torrefaction, incineration, ignition, distillation, sublimation, etc.) and special forms of apparatus required for these operations, are illustrated by chart drawings and actual demonstrations before the class.

Solution, solubility of substances, menstrua used in solutions, filtration, deodorization, precipitation, methods of washing precipitates, decolorization, crystallization, dialysis, etc., and finally the different processes now used for exhausting drugs of their medicinal properties; the essential principles of maceration, digestion, infusion, decoction, and finally displacement by percolation or repercolation, with and without pressure, are explained.

Following the description of, and experiments illustrative of, methods of displacement, there is given a concise classification of menstrua used as solvents of special and peculiar active constituents of drugs. In this connection is considered the solubility of groups of organic compounds, such as alkaloids, glucosides, resins, bitter extractives, etc. in various mixtures of ether, alcohol, glycerin, water and other solvents.

Two lectures are given to describe the different classes of preparations in the pharmacopœia, viz.: abstracta, aquæ, extracta, emplastra, etc., and the characteristics of their standard quality.

Three lectures of this course are devoted to the art of dispensing or extemporaneous pharmacy.

Particular attention is directed to the proper selection of the utensils required for the prescription counter, and the methods of using the same in the compounding of mixtures, pills, powders, plasters, suppositories, etc. The registration, filing and care of prescriptions, and the reading of same, are commented on in connection with the prescriptions used to illustrate the practical points of the lectures.

#### *Senior course*

The first two lectures of the session are devoted to a recapitulation of those leading facts and principles which were explained in detail in the junior class, but which are of so important a character that they are deemed worthy of a careful review.

The rest of the course is divided into three portions: chemicals obtained from the mineral kingdom, the vegetable kingdom and



the animal kingdom ; these are considered mainly as they interest the pharmacist.

The chemistry of the mineral kingdom treats of the officinal preparations of acids, alkalies, alkaline earths, metallic bodies and their combinations, and those elements which are directly or indirectly used in medicine.

Those trade chemicals which are used or sold by the pharmacist are also alluded to ; and the preparation of pharmaceutical chemicals is fully detailed and explained. Tests of purity receive special attention and experiment, and all allied facts and information are narrated. Valuable additions of apparatus have been made to illustrate this department, including enlarged drawings, diagrams, screens, models and slides for exhibition with the lantern.

The alkaloids, glucosides and proximate principles of organic drugs receive the attention due their great importance as medicinal agents ; cellulose and other carbo-hydrates, as starch, sugars, gums, etc. form a group of special interest. Fermentation, and its pharmacopœial products, ethers, organic acids, etc. also form a group.

A brief description is given of the volatile oils, resins, oleo-resins and balsams. All preparations derived or prepared from vegetable drugs are considered in this series of lectures.

The animal kingdom, though yielding but few important products to medicine, yet is one which receives special attention. Fatty bodies, and the preparations derived from them, closes this part of the study.

The closing lecture is on the orderly arrangement of the dispensing establishment and the ethics of pharmacy.

#### THE LABORATORIES

*Analytic chemistry and practical pharmacy* — The laboratories are open daily (holidays excepted) for obligatory junior course and optional courses in chemistry ; and for instruction in practical pharmacy, from September till March.

The obligatory chemical course of laboratory instruction is designed to teach an accurate and scientific method for the identification and separation of the principal metals and acids entering into the composition of the various chemicals of the United States Pharmacopœia.

The instruction consists in personal demonstrations by the professor, with the exact repetition of these demonstrations by the individual members of the class, and afterward the student repeats similar experiments alone under the supervision of the professor.

In the obligatory pharmacy course it is intended that each student shall receive individual instruction, and to this end the class is divided into sections.

In the laboratories the student is supplied with a set of reagents and apparatus for individual work, and has a table and set of drawers assigned to him for his exclusive use.

#### PHARMACOGNOSY

In the junior year the vegetable cell and the nature of its contents, and the anatomy (histology) of the various plant-organs, are studied as thoroughly as feasible. For this purpose the microscope is an indispensable instrument; therefore the junior students are familiarized with its use by performing under the guidance of the professor such manipulations with the microscope and micro-chemical reagents as are necessary to reach the results sought.

The senior students, basing their work on the theoretical knowledge gained, examine the representative drugs derived from root, stem, leaf and reproductive organs of plants.

In order to enable the instructor to advise the students individually, the classes are divided into four sections each, which assemble at different times, so that each may receive the undivided attention of the professor.

#### PRACTICAL BOTANY

The summer class is conducted, every other Saturday, into the fields and woods of the vicinity to study the plants in their native homes, and to collect specimens for the herbarium and garden.

The lectures are designed to give an accurate view of the structure and the vital functions of all the plant organs.

The inductive method is also employed in familiarizing the students with the classification of plants. A sufficient supply of specimens is always on hand for examination and analysis. No limitations or examinations are enforced in this department.

Medical practitioners, amateurs, teachers and students of both sexes find this course of botany particularly instructive, practical and interesting.

## LECTURES ON PHYSICS

The subjects treated of are those of a practical nature that are necessary to the education of the intelligent pharmacist.

The first lecture embraces those physical phenomena that determine the properties of liquids generally, together with the application of these phenomena to plant and animal life ; also the properties of gases, and the practical applications of these to the atmosphere.

The second lecture consists of a discussion of the properties and laws of heat, with a view to the understanding of its industrial applications.

The third lecture continues the discussion of heat in relation to change of state and the results that follow.

The fourth lecture is devoted to the laws of light and its phenomena.

The fifth lecture continues the discussion of light in relation to prisms and lenses.

The sixth lecture treats of optical instruments such as the microscope, together with the optics of the eye, and photography.

The seventh lecture discusses the properties of magnets and their applications.

The eighth lecture takes up static electricity and electrical machines and their applications.

The ninth lecture is on dynamic electricity in relation to the construction and use of galvanic batteries.

The tenth lecture continues the subject of dynamic electricity in the matter of the detection of currents, and the practical applications of the force to every day life.

The text-book recommended is Peck's Ganot's physics.

New and complete apparatus purchased by the Alumni Association of the college is used to illustrate the full course of lectures as outlined in the syllabus.

The marked benefit following a systematic drilling of the students by competent instructors has induced the college to require from the students obligatory attendance in the quiz classes.

## REQUIREMENTS FOR GRADUATION

1 — *Satisfactory preliminary examination.*

2 — *Attendance at lectures* — The candidate must have attended two full courses of lectures ; the last course in this college. The



register must also show attendance at three-fourths of the lectures in each subject.

3 — *Attendance in the analytical laboratory* — He must have attended a 22 days' course in the analytical laboratory of this college.

4 — *Junior examination* — He must have successfully passed the junior examination.

5 — *Attendance in the quiz classes* — He will be required to show evidence through the instructors of chemistry, materia medica and pharmacy of having been regular in his attendance on quiz class instructions.

6 — *Attendance in the pharmaceutical laboratory* — He must have attended a 22 days' course in the pharmaceutical laboratory of this college.

7 — *Examination fee* — The candidate must pay to the secretary or clerk an examination fee of \$10, and furnish him satisfactory evidence as to his time of service in a dispensing pharmacy.

8 — *Practical experience* — The candidate must have been actively engaged in pharmaceutical practice in a dispensing pharmacy at least three and one half years at the time of presenting himself for examination.

9 — He must pass the final examination in practical chemistry, botany, physics and physiology at the end of the junior year; in practical pharmacy, pharmaceutical chemistry and in general pharmacy, chemistry, materia medica and pharmacognosy at the end of the senior year. During the examination they will be required to detect by appropriate tests impurities in chemicals, make officinal preparations and show by a thorough examination in the laboratories that they are competent in the branches taught.

No examination in pharmacy will be given a student except after the fulfilment of all the conditions required of a senior student. Students employed in dispensing pharmacies, but not having had three and one half years' practical experience in the same, and students employed in manufacturing laboratories and wholesale establishments will be admitted to all the examinations, excepting that in pharmacy, providing they have regularly fulfilled all other conditions required of senior students, and only lack practical experience in a dispensing pharmacy.

These students, if successful, will receive a certificate of examination, and, after such time as they can show that all of the con-



ditions required of a senior student have been completed, they will be permitted to enter the graduating class for examination in pharmacy. If the student passes successfully, he may deliver to the college the certificate, and thereupon will receive the diploma of graduate in pharmacy.

Students will also have to pass an examination in the reading and compounding of prescriptions and the identification of specimens.

This is the only examination for graduation held during the year for the senior class or any member thereof.

The trustees not only require every graduate to receive a definite number of marks out of a previously determined number, but each student must have a fixed percentage of marks in every department in which the student may be examined. Therefore, a student may get the required number of total marks for graduation, yet fail because in one department he was below the fixed percentage required. Any student failing in one department, with a general rating that would pass him as a graduate, may present himself at the next regular spring examination to be examined in the one department in which he failed. If successful, he will be declared a graduate without re-examination in the other departments.

If students should fail to appear, or fail to pass, they can only present themselves at the next regular examination at the end of the next lecture term, when they will again have to comply with all the other requirements mentioned above.

#### REQUIREMENTS FOR RECEIVING THE DIPLOMA OF GRADUATE IN PHARMACY, OR DEGREE OF PH.G.

Every person on whom the diploma of graduate in pharmacy is to be conferred must be of good moral character and must have complied with all of the requirements for graduating.

It is to be particularly understood that the diploma will not be delivered to any one who has not attained the age of 21 years and has not had fully four years' practical experience with a person or persons qualified to conduct the business of a dispensing pharmacy. In lieu of this last condition the student must have had three and one half years' experience with a qualified pharmacist, and one half year of actual time and experience in the laboratories of this college.

The attendance in the laboratories must be recorded by the director and cannot be allowed as an offset to a practical experience in a dispensing pharmacy, unless such time is for consecutive days of the school year and during the hours when the laboratory is open for instruction.

In case the student should not have had the requisite experience, nor have attained the age of 21 years, a certificate of examination will be issued, to be subsequently exchanged for the diploma when all of the necessary conditions have been fulfilled.

### BUILDINGS

Main building, three story brick, total floor area 10,200 sq. ft., three class rooms, 350 seats, value \$10,000. Museum, four story brick, floor area 8,400 sq. ft., one class room, 50 seats, value \$6,000. Library in main building.

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## UNION UNIVERSITY

### ALBANY COLLEGE OF PHARMACY

*Eagle st., Albany*

For historic sketch see Union University, p. 597.

### TRUSTEES

Elected

1881 President, Joseph W. Russell.....	Albany
1881 Vice President, Louis Sautter, Ph. G.....	"
1881 Treasurer, Luther H. Tucker .....	"
1881 Secretary, Alfred B. Huested, M. D., Ph. G ...	"
1881 Charles Newman.....	"
1884 John M. Bigelow, M. D.....	"
1889 William J. Walker .....	"

### APPOINTED DURING YEAR

1890 Douw H. Fonda .....	"
1890 Charles H. Gaus.....	"
1890 Harrison E. Webster, LL. D .....	Schenectady

## VACANCIES

Edward P. Waterbury, Ph. D., Albany, died

Addison A. Keyes, Albany, resigned 2 O 1889

Eliphalet N. Potter, D. D., LL. D., Geneva, resigned 8 Ja 1890

## ADMINISTRATION

Figures in column at left give first year of service in Albany College of Pharmacy.

1882 President, Willis G. Tucker, M. D., Ph. D. 4 Lancaster st.  
See also Albany Medical College.

1881 Treasurer, Luther H. Tucker, M. A. 174 Washington av.

M. A. Yale 1858; Senior editor Cultivator and country gentleman.

1883 Secretary, Alfred B. Husted, M. D., Ph. G. 144 State st.

M. D. Albany Medical College 1863; Ph. G. Albany College of Pharmacy 1884; President New York State Board of Pharmacy; Member American Pharmacal Association, New York State Pharmacal Association.

## INSTRUCTION

Figures in column at left give first year of service in Albany College of Pharmacy and years spent in teaching.

1882 Willis G. Tucker, M. D., Ph. D. President and Professor of  
20 Chemistry, 4 Lancaster st.

See also Albany Medical College.

1883 Alfred B. Husted, M. D., Ph. G. Secretary and Professor  
8 of Botany and Materia Medica, 144 State st.

See also "Administration."

1881 Gustavus Michaelis, Ph. G. Professor of Pharmacy, 63  
12 Green st.

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Emerson B. Allen . . . . . Heuvelton

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Wm. J. Walker, senior prize, Frank S. Veeder, Fultonville . . .	\$25
Faculty, junior prize, Herbert E. Walker, Sandy Hill . . . . .	20

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The curriculum of the college embraces

*Chemistry* — theoretic, general, pharmaceutical and analytic

*Botany* — structural, systematic and analytic

*Materia medica* and *pharmacognosy*

*Pharmacy* — theoretic and practical

## CHEMISTRY

The lectures on chemistry to the junior class are preceded by a short course on those principles of natural philosophy most important in their bearing upon the science of chemistry. The general principles of matter are first discussed and the mechanical powers briefly explained. Lectures on hydrostatics, pneumatics, heat, light, magnetism and electricity follow, these subjects being illustrated by experiments. The course in chemistry opens with lectures upon the principles of the science, after which the non-metallic elements receive attention during the remainder of the course, the lectures being illustrated by experiments.

The lectures to the senior class open with the metals, and a consideration of these and the various compounds which they form occupy about two thirds of the term. The latter part of the course is devoted to the chemistry of the carbon compounds or organic chemistry, which is treated from the practical rather than the theoretic standpoint. Throughout both courses special attention is given to those chemical compounds which are employed in pharmacy, and to the nature of the chemical changes which take place in pharmaceutical processes.

## BOTANY AND MATERIA MEDICA

The principles of botany are taught by lecture and recitation; and include a consideration of the structure, organs, physiology, general uses of vegetation and outline of the system of classification of plants. The characteristics of the more important natural orders are explained. The lessons are exemplified by specimens illustrating the morphological variations of roots, stem, leaf, etc. Dried plants and parts of plants are used to show the formation of stem, leaf and flower. The latter part of the junior course is devoted to animal *materia medica*.



The lectures and lessons on *materia medica* are based on the pharmacopœia, without overlooking the claims of important unofficinal remedies, and consider the natural history, properties, identity, medical uses and methods of determining the purity, and detecting adulterations in the articles lectured on. Drugs having poisonous properties and those liable to chemical or fermentative change receive special attention.

The subjects discussed are illustrated by the exhibition of specimens from the college cabinets and the use of plates and diagrams.

Each student is furnished with a specimen of the drug at the time it is under consideration.

#### PHARMACY

The junior course opens with a series of lectures devoted to the various systems of weights and measures used in the United States, Great Britain, France and Germany, which is followed by the consideration of specific gravity, the theory and practice of which, together with its applications in pharmacy, is illustrated by numerous experiments. Next follow several lectures on pharmaceutical operations, viz. : comminution, solution, filtration, neutralization, crystalization, the application of heat as used in the processes of evaporation, sublimation, distillation, etc. and in a later part of the course the subjects of maceration, expression, infusion, decoction, digestion and percolation are considered, the latter receiving special attention on account of its great importance and wide application in pharmacy. The concluding lectures of this course are devoted to those manipulations which belong to the dispensing and prescription counter.

The senior course of lectures is mainly devoted to inorganic and organic pharmaceutical chemistry. In the first portion the non-metals, acids and alkalies, the metals and their preparations, officinal and non officinal, are considered and illustrated by numerous experiments. The second part treats of those chemicals which are derived from organic bodies, as the alcohols, ethers, acids and alkaloids.

#### Pharmaceutical laboratory course

A pharmaceutical laboratory for practical instruction will be opened this winter for junior and senior students. The junior class will meet on Thursdays and the senior class on Fridays

during 10 or more weeks of the course, and practical instruction in the subjects lectured on will be given to each class.

These courses are obligatory upon all students entering the junior course and expecting to receive a diploma on completion of the two terms, and are intended to fit the student to conduct the processes of manufacturing and dispensing which may occur in the every day practice of his vocation.

Practical instruction in the following subjects will be given: the use of the balance, thermometer, hydrometer and specific gravity bottle; distillation, including the execution of ordinary and fractional distillation for the separation and estimation of liquids of different boiling points; percolation and repercolation, including the manufacture of tinctures and fluid extracts; application of direct and steam heat in its various forms, including the manufacture of syrups, solid extracts, etc., reading prescriptions, making emulsions, pill masses, troches, capsules, wafers, ointments and plasters; practical demonstrations in volumetric analysis, including the use of volumetric apparatus in making of standard volumetric solutions; estimation of sulphuric, acetic, nitric and hydrochloric acids; estimation of ammonia; making solution of ferric chloride and estimation of iron; manufacture and assay of nitrous ether; assay of opium; making, purifying and granulating salts, such as ammonium chloride.

### Chemical laboratory course

The laboratory course in this college has been made compulsory. It can be taken either during the junior or senior year, but students are advised to select the former as affording the most time and the best opportunities.

### Annual lecture term

The annual course of instruction in this college consists of six or more lectures each week during a period of five months, together with practical laboratory work, etc. The course is graded and extends over two years; students being divided into junior and senior classes, consisting of first and second year students respectively. The lectures to the senior class are given Monday, Wednesday and Friday evenings and to the junior class Tuesday and Thursday evenings and Saturday afternoons, but students are entitled to attend all lectures without extra expense.

## REQUIREMENTS FOR GRADUATION

The diploma of this college confers the degree of graduate in pharmacy (Ph. G.). Applicants for this degree must be at least 21 years of age, of good moral character, have attended two full courses of lectures (which shall have included all laboratory practice) in this college, or the last course in this and the first in some other college of pharmacy or corresponding institution where the same branches are taught, provided there be no college of pharmacy in the same locality; have had, inclusive of the time of attendance at this college, four years practical experience with some reputable and competent pharmacist; have presented to the faculty an original thesis on some subject appertaining to pharmacy; have passed a satisfactory examination, and paid all fees required.

## BUILDINGS

The college owns no buildings, but uses rooms in the Albany Medical College.

## UNIVERSITY OF BUFFALO COLLEGE OF PHARMACY

*Main and Virginia sts., Buffalo*

For historic sketch and trustees see University of Buffalo, p. 1101.

## ADMINISTRATION

Figures in column at left give first year of service in Buffalo College of Pharmacy.

1886 Dean, Willis G. Gregory, Ph. G., M. D. 530 Main st.

M. D. University of Buffalo 1882, Ph. G. 1887; President New York State Pharmacal Association; Member American Pharmacal Association; Author Gregory's laboratory manual for pharmacal students.

1889 Secretary, John R. Gray, M. D. 224 Front av.

M. D. University of Buffalo 1889; Member New York State and American Pharmacal Associations.

1888 Librarian, Sara P. Sheldon. 830 Main st.

1884 Registrar, Eli H. Long, M. D. 1335 Main st.

See also University of Buffalo, Medical Department.

Janitor, Louis G. Staffeldt.

# INSTRUCTION

Figures in column at left give first year of service in Buffalo College of Pharmacy and years spent in teaching.

1886 David S. Kellicott, Ph. D., F. R. M. S. Emeritus Professor  
22 of Botany and Microscopy.

B. S. Genesee College 1869; Ph. B. Syracuse 1874, Ph. D. 1881; Teacher of mathematics, Mexico Academy 1869; Teacher of mathematics, Keystone State Normal School 1870; Teacher of natural sciences, Buffalo State Normal School 1871-88; Professor of zoology, Ohio State University 1888-; Member American Society Microscopists; Fellow American Association for the Advancement of Science, Royal Microscopical Society of London.

1886 Enoch V. Stoddard, M. A., M. D. Emeritus Professor of  
17 Materia Medica, 68 South Washington st., Rochester.

See also University of Buffalo, Medical Department.

1886 Rudolph A. Witthaus, M. A., M. D. Emeritus Professor of  
Pharmaceutical Chemistry and Toxicology.

1886 Willis G. Gregory, Ph. G., M. D. Dean and Professor of  
Pharmacy and Director of the Pharmacal Laboratory.

See also "Administration."

1886 Frank P. Vandenberg, B. S., M. D. Professor of Chemistry  
and Toxicology.

1889 Ernest Wende, M. D., B. S. Professor of Botany and  
Microscopy.

1889 Eli H. Long, M. D. Professor of Materia Medica.

8 See also University of Buffalo, Medical Department.

1889 John R. Gray, M. D. Professor of Pharmacognosy, 224  
2 Front av.

See also "Administration."

1886 Oscar Oldberg, Phar. D. Lecturer on Metrology and  
Nomenclature.

1889 Hon. E. Carlton Sprague, M. A. Lecturer on Pharmaceu-  
3 tical Jurisprudence.

B. A. Harvard 1843.

## CURATORS

President of Erie County Pharmaceutical Association

President of Erie County Board of Pharmacy

Robert K. Smither ..... Buffalo

Cornelius M. Lyman ..... "



Edward S. Dawson, jr .....	Syracuse
Clay W. Holmes .....	Elmira
William W. Henderson.....	Jamestown
John P. Diehl .....	Buffalo
Curtis H. Haskin .....	Rochester

### HONORARY DEGREES

(None)

### COLLEGE APPOINTMENTS

Honor men — Willet H. Mosher.....	Lockport
Chas. H. Gauger.....	Rochester
John Tilma .....	Buffalo
Frank Rowley, jr.....	Victor
Eugene A. Spenser .....	Cleveland, O.

### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Peabody prize, Herman C. Cleveland, Buffalo.....	\$50
J. J. Matthews prize, Willet H. Mosher, Lockport.....	25
Faculty junior prize, Paul Escher, Buffalo.....	25
City of Buffalo scholarship, Richard F. Morgan.....	100

### REQUIREMENTS FOR ADMISSION

(None reported)

### COURSES OF STUDY

#### Lectures

The lectures are delivered in the amphitheatre of the university building, and are illustrated by experiments, demonstrations, specimens, diagrams or lantern projections, as may best serve to impart a knowledge of the subject.

#### PHARMACY

*Junior course* — The junior course in this department is chiefly a practical laboratory course. The class receives two hours' didactic instruction, however, each week; one hour being filled by a lecture and the other used for an oral review or "quiz" on the work of the previous week. It is found that such "quizzing" is of much service to the instructor, showing the degree to which

the student has grasped and appropriated the lessons given. It is of much greater value to the student, as it enables him to obtain a distinct comprehension of topics not thoroughly understood when first presented, and also enables him to turn his unarranged knowledge into the definite form of answers to questions.

The lectures are closely related to the practical work which the student performs in the pharmacal laboratory. After an introductory lecture on the progress and prospects of pharmacy, the United States Pharmacopœia and other hand-books of pharmacy are fully explained. Following this, the principles of metrology; the weights and measures of the world; reciprocal relations of weight and volume, weighing and measuring and the instruments used for these operations; specific weight and specific volume and their determination and practical applications; and especially the weights and measures of the United States Pharmacopœia will be considered. The generation and application of heat for pharmacal processes are then described. The various operations in pharmacy are treated in detail, the apparatus employed exhibited or fully illustrated, and the principles involved simply and clearly presented to the student. The topics studied embrace desiccation, comminution, maceration, percolation, expression, evaporation, filtration, precipitation and many others of more or less importance. The student cannot leave this course without a good knowledge of operative pharmacy.

*Senior course*—At the beginning of this course one or two lectures review some of the more important topics studied junior year. This enables the student to begin the senior work with a refreshed memory on the subjects previously treated. Following this comes a general consideration of the various classes of Galenical preparations. These are presented in groups, taking up first solid and semi-solid products, such as species, powders, triturations, capsules, papers, abstracts, extracts, resins, oleo-resins, confections, troches, pills, masses, pastes, jellies, cataplasms, cerates, ointments, oleates, plasters and suppositories. Next come liquid aqueous preparations, including medicated waters, solutions, infusions, decoctions, mucilages, mixtures, emulsions and syrups. Then alcoholic and hydro-alcoholic solutions are presented, embracing spirits, elixirs, wines, tinctures and fluid extracts. And lastly, not falling within the groups above men-

tioned, come a few small classes like glycerites, vinegars, collodions and liniments.

These classes are first considered in reference to the methods of their preparation, apparatus employed in their manufacture, strength, preservation, uses, etc., and then the characteristics of the individual members are carefully studied. By this treatment the student obtains an intimate acquaintance with the Galenical pharmacy of the pharmacopœia.

#### CHEMISTRY

*Junior course*—The junior class attends one lecture each week from the opening of the college till the beginning of the holiday vacation; and three lectures each week from January to the close of the session. 10 lectures are given on the principles of physics, beginning with a consideration of matter and its properties and dynamics so far as of use to the students of chemistry and pharmacy. The subject of heat is treated in a practical way. Optics is studied so as to make the student acquainted with the principle of the more common optical instruments. Electricity is fully discussed and illustrated by experiments to demonstrate its laws and useful applications.

Next, chemical notation, nomenclature, definition of terms, classification of the elements and the theory of combining proportions are given, followed by a study of the methods of calculating chemical formulæ and of problems of practical use in analytic and industrial chemistry.

Then in the order of their classification the 70 elements are studied in detail. This study includes the locality in form in which each element occurs in nature, technical and commercial methods of preparation, physical and chemical properties, impurities or adulterants with methods for their detection and separation, and particularly the pharmacal and sanitary uses of each substance.

The compounds of the elements (excepting those of carbon) are studied in similar order with special attention to their preparation, impurities, analytic characters and pharmacal uses. The subject of incompatibility finds a place in almost every lecture.

The inorganic materia medica is the special field of the junior course, which, therefore, deals chiefly with the mineral chemistry of the pharmacopœia.



*Senior course*—The chemistry of the senior course is taught chiefly in the laboratory.

One didactic lecture, however, is given each week throughout the session. These lectures are devoted to the compounds of carbon and the chemistry and toxicology of that portion of the United States pharmacopœia not considered during the junior session. In dealing with the carbon compounds an important aim is to explain the formation, constitution and relations of organic substances.

Lectures on the hydrocarbons and their derivatives are followed by a study of starches, sugars, resins, glucosides, alkaloids and albuminoids.

#### MATERIA MEDICA

*Junior course*—This course includes so much of physiology as will enable the student to understand the behavior of medicines within the digestive tract, their site of action and, to some extent, their effect on the system. The relation of solubility to the absorption of medicines into the system, the necessity and advantages of different forms of preparations and their differences in effect are all illustrated. The poisonous effects of medicines are considered at length, and the principal dangerous drugs are studied individually, together with methods of treatment of poisoning by each. Sites of application of medicinal substances *e. g.* the stomach, the skin, the bowel are briefly discussed.

A convenient classification of the medicinal agents is made and the therapeutical terms applied to their properties fully explained.

Attention is also given to the prescription writing, with special reference to the construction of prescriptions, abbreviations employed, etc.

The course concludes with a study of medicinal substances by classes, by way of preparation for the senior year, when the substances will be studied individually.

*Senior course*—This course embraces a study of the organic drugs with their preparations, alkaloids and other principles; the mineral and haloid salts, products of fermentation, animal drugs, etc., including all official and unofficial substances. They are grouped for their study from the standpoint of practical pharmacy, *i. e.*, those drugs containing similar or identical proximate principles are classed together, and those salts having similar properties.

Special emphasis is placed on the constituents of drugs with a



view to their pharmacal relations and their active principles also receive close attention. The history of the crude drugs, their official preparations, doses and ordinary uses are fully described in each case.

Special attention is also given to poisonous properties of medicines and to properties that would affect their combination with other substances.

#### BOTANY

The course in this subject consists of a weekly lecture and "quiz" and while weather permits, of weekly excursions for the practical study of growing plants. The lectures are illustrated as far as possible by recent and dried specimens supplemented by charts and diagrams. The lectures and quizzes are designed to cover the subject of organography, but frequent reference is made to histological, geological and physiological botany by the exhibition of microscopical sections and fossil remains and the conduction of simple experiments with growing plants. Taxonomy is presented to some extent in the didactic lectures, but mainly in the field work.

#### Special instruction

##### PHARMACAL JURISPRUDENCE

Senator Sprague lectures during the senior year on the rights and obligations of the pharmacist. Pharmacal legislation in New York is first discussed and the application of the principles of common law to the practice of pharmacy is presented.

#### Laboratories

In the chemical and pharmacal laboratories each student is provided with a separate locker for chemicals or drugs and another for apparatus. The microscopical laboratory is separate from the others.

The pharmacognocical laboratory is in the college museum and is furnished with about 400 specimens of crude organic drugs, tables, trays, maps, black-boards and photographic and photomicrographic illustrations of medicinal plants and drugs.

##### PHARMACAL LABORATORY

The regular work in this laboratory is confined to junior year.

Each student is supplied with a separate set of apparatus, consisting of 23 pieces, and including a retort stand, Bunsen-burner, sand-bath, water-bath, Florence-flasks, Berlin evaporating-cap-

sules, thermometer, graduates, mortar, spatulas, percolators, etc.

Four hours each week are spent in this laboratory. The first work is directed to gaining an acquaintance with the pharmacal utensils to be used and with the principles and methods of their employment.

The student then takes up the simpler operations, and proceeds by easy advances to those more complex, making preparations by the process of drying, calcination, trituration, oxidation, fusion and ignition, distillation, precipitation, granulation, scaling, double decomposition, percolation, etc.

The student keeps a record of his laboratory work and also preserves samples of his products which, after examination by the director of the laboratory, may be retained.

#### CHEMICAL LABORATORY

*Senior course* — Here the class is taught to prepare a number of medicinal chemicals and to recognize the more common bases, such as potassium, sodium, ammonium, barium, strontium, calcium, magnesium, aluminium, zinc, iron, arsenic, antimony, mercury, lead, bismuth, copper, silver, cobalt, nickel, chromium, etc., and to detect the ordinary acids which form salts with these bases.

The class next practices qualitative analysis by examining a carefully arranged series of samples whose composition is unknown to the student.

After these exercises are completed, the tests prescribed by the United States Pharmacopœia are applied to medicinal chemicals for their identity and to detect any of the unusual impurities or adulterants.

The more important processes of assaying crude drugs are described and such as are most manageable for the pharmacist are practiced in the laboratory. As much time as possible is devoted to this feature of the course.

The class has a thorough drill in the chemistry of "incompatibles," with practice in producing the reactions and illustrating the changes by written formulæ.

Opportunity is also offered for practice in the analysis of foods, such as the sugars, fats and starches, and beverages — water, milk, malt and spirituous liquors.

## MICROSCOPICAL LABORATORY

This laboratory is furnished with tables, microscopes, and other practical appliances. In it the student learns not only methods of microscopical technology and leading morphological facts of important types in the vegetable kingdom, but also receives instruction in the micro-chemical analysis of plants and in the detection of drug adulterations.

The practical work in the microscopical laboratory is obligatory on the student of both junior and senior classes.

1 Each student of the junior year is provided with table and microscope, with material and reagents, and receives personal instruction in the preservation of material, hardening, cutting sections, embedding, mounting objects, adjustment of the microscope for work, drawing from the microscope, measurement of objects; also in staining and permanent mounting.

2 Each student of the senior year under the direct guidance of the professor of botany, receives advanced practical instruction in the microscopic analysis of plants, in micro-chemistry as applied in botany, in the examination of drugs and for the detection of adulterations.

## PHARMACOGNOSY

The work in this laboratory is devoted to examination and study of the important crude or unprepared organic drugs.

The student has an opportunity of examining not only the representative drugs, but, as far as possible, original specimens from which the drug is derived, including the classes of roots, rhizomes, tubers, bulbs, twigs, woods, barks, leaves, herbs, flowers and petals, fruits, seeds, extracts, inspissated juices, gums, gum-resins, resins, oleo-resins, balsams and the animal drugs.

*Junior course* — The elements of pharmacognosy are taught; it is aimed to familiarize the student with names, classification, commercial source and physical characteristics of the more important organic drugs.

*Senior course* — Didactic lectures are given on all the important medicinal substances derived from the classes mentioned above, touching on the name and various synonyms. Reference is made to the geographical distribution, to collection and preparation, to cultivation and to the commercial relations, when such exist.



A historical survey is studied so far as feasible, in order that each single drug may become an object of interest, thereby enabling the student better to retain the practical knowledge.

At the beginning of the study of each separate class of drugs the morphology of the plant parts under consideration is dwelt upon.

Each student must be provided with a pharmacopœia for class work, in order that he may compare the drug in hand with the pharmacopœial definition and description. It teaches him to think of the drug and to identify it in concise and technical thought and language, and thereby become familiar with the drug in its most perfect form, which is the chief safeguard against adulterations and substitutions.

### SYNOPSIS OF INSTRUCTION

<i>Junior</i>		<i>Senior</i>	
Hours per week		Hours per week	
2	Pharmacy, lectures	2	Pharmacy
4	“ laboratory	1½	Chemistry, lectures
2½	Chemistry and toxicology	4	“ laboratory
1½	Materia medica, half year	2½	Materia medica
2	Botany	2½	Microscopy
1	Microscopy, half year	2	Pharmacognosy
1½	Pharmacognosy, half year		

### REQUIREMENTS FOR GRADUATION

Progress in college study is so materially improved by practical experience, that students are earnestly advised not to enter the course without having spent at least a year's time in a store with a progressive pharmacist. Time thus spent will be found in later years to have been most valuable.

The degree of graduate in pharmacy is conferred in accordance with a vote of the council of the university on the joint recommendation of the faculty and the board of curators. Such recommendation is made on evidence that the student is 21 years of age and of good moral character; has attained four years' practical experience where physicians' prescriptions are dispensed, which may include time spent at college; attended two full courses of instruction in a properly incorporated college of pharmacy, the last of which shall have been at this college; and has passed the required examinations in pharmacy, chemistry, toxicology, materia medica, botany, microscopy and pharmacognosy. The commencement occurs on the last day of the session, when the degree is publicly conferred.



In case the student has not had the requisite experience or has not attained the age of 21 years, a certificate of examination is issued, to be subsequently exchanged for the diploma, when the lacking requirements have been fulfilled.

## BUILDINGS

This department owns no buildings but rents such rooms as it occupies from the medical department.

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## HARTWICK SEMINARY

### *Hartwick Seminary*

CONSISTING OF

Theological Department

Academic Department

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

17 Ap 1816 Legislature incorporated Hartwick Seminary with the proviso that the principal should teach or provide for a course in theology.

13 Ag “ Regents admitted the seminary.

## TRUSTEES

Elected

1870	President, Rev. Wm. Hull	Hudson
1883	Treasurer, G. N. Frisbie	Middleburgh
1881	Secretary, Rev. Chester H. Traver	Rhinebeck
1871	Rev. M. W. Empie	Churchtown
1871	Rev. Nicholas Van Alstine, D. D.	Raymertown
1874	William C. Davison	Hartwick Seminary
1876	Rev. Marcus Kling	
1879	Rev. Peter Felts, D. D.	Johnstown
1882	James A. Lynes	Cooperstown
1884	James Fellows	New York
1884	Andrew Spencer	Milford

## APPOINTED DURING YEAR

1890 Rev. Chauncey Diefendorf..... Berne

## THEOLOGICAL DEPARTMENT

*Hartwick Seminary*

## ADMINISTRATION

Figures in column at left give first year of service in Hartwick.

1871 Principal, Rev. James Pitcher, M. A.

M. A. Union.

1831 Chairman of Theological Faculty, Rev. Alfred Hiller, D. D.

Graduate Hartwick Seminary 1857; D. D. Wittenberg College,  
Springfield, Ohio 1882.

1880 Secretary, Rev. John Luther Kistler, M. A.

B. A. Pennsylvania College 1872, M. A. 1875; Graduate of  
Lutheran Theological Seminary, Gettysburg 1876; Pro-  
fessor mathematics, Missionary Institute, Selinsgrove,  
Pennsylvania 1874-75; Professor of Greek and mathematics,  
Hartwick Seminary.

## INSTRUCTION

Figures in column at left give first year of service in Hartwick and years spent  
in teaching.

1881 Rev. Alfred Hiller, D. D. Dr George B. Miller Professor  
10 of Systematic Theology, Old Testament Exegesis, etc.

See also "Administration."

1871 Rev. James Pitcher, M. A. Principal and Professor of  
20 Homiletics, etc.

See also "Administration."

1880 Rev. John Luther Kistler, M. A. Professor of New Testa-  
16 ment Exegesis, etc.

See also "Administration."

Rev. G. T. Behringer, M. A. Professor of Church History, etc.

1880 Rev. William Hull. Lecturer on Ecclesiastical Law, etc.  
Hudson.

Editor Saugerties telegraph, 1853-90, Drafted men's advocate,  
1886- ; Author of many religious papers.

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Weltner theological prize, W. M. Benson, Albany . . . . .	Value \$10
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## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

*First year*—Greek Testament, mental philosophy (Haven), evidences of Christianity, Butler's analogy, natural theology, philosophy of the plan of salvation, liturgics, pulpit elocution, Horne's introduction, and catechetics (Ziegler).

*Second year*—Greek testament, Hebrew, moral philosophy (Haven), homiletics (Ziegler, Phelps), sacred history (Kurtz), systematic theology (Storr and Flatt, Schmid, Knapp, Book of Concord), pulpit elocution.

*Third year*—Greek Testament, Hebrew, church history (Kurtz); history of doctrines (Hagenbach), pastoral theology (Ziegler), composition and delivery of sermons, church polity, pulpit elocution.

## BUILDINGS

See Hartwick Seminary, Academic Department.

## ADDITIONAL INFORMATION

Statistics concerning this department are here given because not complete enough to be included in table 3.

## CALENDAR FOR PAST YEAR

1st term of 15 weeks began	14	S
2d " " 13 " "	6	Ja
3d " " 11 " "	14	Ap
Commencement held	25	Je

## CLASSIFICATION OF STUDENTS

Theological, First year	8
Second "	4
Third "	1
Preparandi	9

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Total..... 22 men,  
of which 21 resided in this state and 1 was from Canada.

## SUMMARY OF INSTRUCTION OFFERED

	Total lectures and exercises
Christian evidences .....	140
Bible .....	115
Exegesis, Greek testament .....	190
Homiletics .....	20
Ecclesiastical history .....	190
Biblical antiquities .....	115
Sacred geography .....	60
Church government .....	10
Pulpit elocution .....	100

All other statistics are included in the academy table with those for the academic department.

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COLGATE UNIVERSITY  
HAMILTON THEOLOGICAL SEMINARY  
*Hamilton*

For historic sketch see Colgate University, p. 667.

TRUSTEES

President, Samuel Colgate .....	New York
First Vice-President, Samuel T. Hillman ...	"
Recording Secretary, Rev. William N. Clarke, D. D. ....	Hamilton
Corresponding Secretary and Acting Treas- urer, Rev. Hinton S. Loyd .....	"
L. H. Biglow .....	New York
Rev. George H. Brigham .....	Cortland
Rev. John J. Brouner .....	New York
Warren J. Buell .....	Hamilton
Sylvester Burchard .....	"
Rev. William T. Henry .....	Elmira
Daniel M. Holmes .....	Norwich
Rev. Henry M. King, D. D .....	Albany
Alvah Pierce .....	Hamilton
Rev. A. M. Prentice .....	West Troy



Benjamin F. Bonney .....	Hamilton
James B. Colgate .....	New York
Rev. Henry A. Cordo, D. D .....	Cortland
Elisha B. Gaskell .....	Hamilton
Rev. Arthur Jones .....	Newburgh
William H. Montgomery .....	Rochester
John S. Munro .....	Camillus
Leonard Richardson .....	Brooklyn
Rev. Nathan E. Wood, D. D .....	"
Rev. William R. Wright .....	Fort Ann
Jabez A. Bostwick .....	New York
Rev. Albert P. Brigham .....	Utica
Richard M. Colgate .....	North Orange, N. J.
Rev. Lucius M. S. Haynes, D. D .....	Troy
Alfred S. Hubbell .....	Buffalo
Rev. John Humpstone, D. D .....	Brooklyn
Rev. Abraham C. Osborn, D. D .....	Albion
Charles R. Payne .....	Hamilton
George A. Woolverton .....	Albany

### ADMINISTRATION

Figures in column at left give first year of service in Hamilton Theological Seminary.

1853 President of the University, <sup>1</sup>Ebenezer Dodge, D. D., LL. D.  
Educated at Brown University.

Treasurer, Rev. Hinton S. Loyd.

Secretary New York Baptist Education Society.

1875 Librarian, Rev. Sylvester Burnham, D. D.

### INSTRUCTION

Figures in column at left give first year of service in Hamilton Theological Seminary and years spent in teaching.

1853 <sup>1</sup>Rev. Ebenezer Dodge, D. D., LL. D. Professor of Christian  
36 Theology.

1850 Rev. Alexander M. Beebee, D. D. Professor of Homiletics.  
40 Educated at Colgate.

Rev. H. Harvey, D. D. Professor of New Testament  
Exegesis and Pastoral Theology.

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<sup>1</sup> Died 5 Ja 1890.

15 Rev. William Hale Maynard, D. D. Professor of Ecclesiastical History.

Educated at Hamilton College.

20 Rev. Sylvester Burnham, D. D. Professor of Semitic Languages and Old Testament Exegesis.

Educated at Bowdoin.

Rev. Nathaniel Schmidt, M. A. Associate Professor of Semitic Languages and Biblical Greek.

Rev. Hinton S. Loyd, D. D. Lecturer on Methods of Christian Work.

See also "Administration."

Prof. Alexander Winchell, LL. D. Brooks Lecturer on the Relations of Religion and Science.

Rev. Nathan E. Wood, D. D. Lecturer in the Annual Lecture Course.

### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

### REQUIREMENTS FOR ADMISSION

1 *For the full course* — This is intended for college graduates. Other students are admitted to it only when, on examination by the faculty, it appears that they possess attainments such as fit them to pursue its studies with success; and in every case the examination in Greek must show that their preparation is fully adequate for the successful prosecution of the Greek course in exegesis.

2 *For the Greek and English course* — Only those are admitted who pass a thorough examination in history, rhetoric, logic and psychology.

3 *For the English course* — Candidates are expected to possess a knowledge of the higher branches of English study, and mental capacity and discipline such as, in the judgment of the faculty, fit them to pursue, with profit, the studies of the course.

Ordinarily, no person under 25 years of age is admitted to this course.

## COURSES OF STUDY

## Semitic languages

*First year* — (1) Hebrew, grammar, prose accents and selections from the historical books; (2) elements of comparative Semitic philology.

*Second year* — (1) Hebrew, prosody, poetic accents, translation of selections from poetical books; (2) Syriac, grammar, translations from the Peschitto Old Testament and from historians and commentators; (3) Assyrian, grammar and translation of transliterated and cuneiform text.

*Third year* — (1) Hebrew reviews; (2) Chaldee, grammar, translation of selections from the Targums, and Biblical Chaldee; (3) Syriac, translation of selections from the Peschitto New Testament and selections in verse; (4) Assyrian translation of cuneiform text; (5) Arabic, grammar, translation from the Kuran and from the poets; (6) comparative Semitic philology.

## Old Testament exegesis

## 1—FULL COURSE

*First year* — (1) Introductory study, recitations from text-book, practical examples; (2) Hermeneutics and exegetics of the Old Testament and recitations from text-book, with practical examples; (3) Written exegeses of selections from the historical books; (4) Essays on topics related to the interpretation of the historical books.

*Second year* — (1) The nature and laws of Old Testament prophecy, recitations from text-book, and study of related Old Testament passages; (2) Written exegeses of selected psalms; (3) Written exegeses of one or more of the prophetic books; (4) Essays on topics related to the interpretation of the poetical and the prophetic books.

*Third year* — (1) Christology of the Old Testament, recitations from text-book, and study of related Old Testament passages; (2) Written exegeses of Messianic prophecies; (3) Written exegeses of the Messianic psalms; (4) Essays on topics related to the interpretation of Christological passages.

## 2—GREEK AND ENGLISH COURSE

In this course the revised English version takes the place of the original text. The work of the course is as follows :

(1) The work of the full course in each year ; (2) Studies in the Old Testament literature : Preparation of papers on the character and contents of Old Testament books.

## 3—ENGLISH COURSE

In this course, as in the Greek and English course, the revised English version takes the place of the original text. The work of the course is the same as that of the first and third years of the Greek and English course, except when the course is prolonged to three years. In such case the work of the two courses is identical.

## 4—OPTIONAL COURSE IN THE ENGLISH OLD TESTAMENT

The object of this course is to give to every student the opportunity to investigate and become acquainted with the contents of all the Old Testament books during his stay in the seminary. The course occupies three years, and has to do with those portions of the Old Testament which are not studied in the required courses. The revised English version is mainly used, but all necessary reference is made to the original text. The work of the course is optional, and is distributed as follows :

*First year* — Historical books.

*Second year* — Poetical books and minor prophets in part.

*Third year* — Greater prophets and minor prophets completed.

## New Testament exegesis

## GENERAL SUBJECTS

Principles of interpretation ; Biblical criticism — its history, principles and results as related to the text of the New Testament ; Archeology and geography of the New Testament period. The method of study in these subjects is by lecture, recitations from text-books, and essays prepared by the classes.

## INTRODUCTION

General and special introduction to the books of the New Testament with an examination of the history and special characteristics of each book, and an outline analysis of its contents.



This occupies one exercise a week throughout the course, and is intended to secure on the part of the student the careful translation or reading of all the books, with a study of the plan and argument of each book, and of passages of special interest in it; together with an investigation of its canonicity and of other questions belonging to introduction.

#### EXEGESES

*First year* — 1 The Gospels; Translations and exegesis of select passages, embracing the chief events in the life of Christ, miracles, parables and several of the principal discourses; 2 The Acts and the Epistles of Paul: Translation and Exegesis of select passages from each book, in connection with the studies of its plan, and an outline analysis of its course of thought.

*Second year* — The Epistles of Paul; Translation and exegesis of Romans and Hebrews.

*Third year* — The catholic epistles and Revelation; Translation and exegesis of James, First Peter, First John, and of select portions of the other catholic epistles; with the translation of a part of the book of Revelation and an examination of the current theories of its interpretation. Also, a comparison of the style composition and the type of doctrine in the several New Testament writings.

#### Biblical Greek

##### LANGUAGE

##### *Full course*

Throughout the middle year one hour a week is devoted, in this course, to the study of selections from the Septuagint version of the Canonical Scriptures. This work comprises translation, textual criticism, study of syntactical and lexicographical peculiarities, and a careful comparison between the Greek version and the Hebrew text, with translations of important variants from Greek to Hebrew and from Hebrew to Greek.

##### *Greek and English course*

In this course four hours each week are given to a grammatical study of the New Testament. The work is as follows:

*First term* — Study of New Testament Greek with practical exercises and grammatical study of the fourth gospel.

*Second term* — Grammatical study of selections from the Pauline epistles.

*Third term* — Grammatical study of selections from the catholic epistles.

### *Optional course*

- (1) Translation and study of selections from the Old Testament Apocrypha. In this study particular attention is given to the influence of Old-Babylonian, Persian and Greek thought.
- (2) Textual criticism of the Greek Bible. In this study special attention is paid to Biblical quotations in patristic literature.

## 2 — HISTORY AND LITERATURE

To the history reflected in this literature the students in the Greek-English course and in the English course devote two hours every week. The work includes lectures, essays by the class, recitations from text-book and discussion. It is accomplished in the first year.

### **Ecclesiastical history**

Preparation of the world for Christianity; Life of Christ; Apostolic age.

Patristic period; Spread of Christianity; Patristic literature and theology; Early heresies; Development of the Hierarchy.

Middle ages; Christianity in Germany and Britain; Development and corruption of the Papacy, Paulicians, Albigenses, Waldenses, etc., scholasticism and mysticism.

Preparation for the Reformation; The Reformation; Reaction on catholicism.

History of modern denominations; Modern missions.

History of doctrines in the successive periods of Christianity.

Lectures, daily discussions, essays by the class and frequent reviews throughout the course.

### **Christian theology**

Axioms of theology; Definitions, sources, objects, relations and methods of theological science; Relations of Christianity to ethnic beliefs; Comparative symbology; Literature of systematic theology.

Possibility of revelation; Divine origin of Judaism; The evidences of Christianity; Historical character of the New Testa-

ment; Christianity its own witness as a fact, a life, a doctrine, a law, a kingdom, a fulfillment and a world power.

Inspiration of the Scriptures; its nature, its relation to revelation; Theories of inspiration and the proof of the same.

Idea of God; Evidence of His existence; His essential being, triune nature, attributes, purposes, creation of the world and His relation to it, government and His providence.

Natural state and position of Adam; His apostacy; fall of man; Nature of original sin; Justification of the representative system; The character of personal sin; Its growth, the forms of sinfulness and kinds of sin; Degrees of personal guilt and penalties of sin.

Possibility of the Incarnation; The fact of the same; Leading events in the life and career of our Lord; His sinlessness and the type of His humanity; The atonement; The intercession and the exaltation of Christ.

Personality of the Spirit; His work in the origination and the growth of the divine life; Election of God; The means of grace; Perseverance of the Christian.

The close of probation; The character of the triumph of Christianity; The general resurrection; The rewards and the penalties of the future life.

The idea of Christian ethics; The history of ethical opinions; Ethical theories; Practical Christian morals.

Special attention is given in the lecture room to a free discussion of all the topics brought before the class. The students are encouraged to form their own opinions. Frequent essays are expected from the members of the class on points connected with theology.

### Pastoral theology

*Church polity* — The Church; its membership, internal organization, external relations, officers, discipline.

*The ordinances* — Their nature, efficacy and obligation; baptism, its significance, form and subjects; the Lord's Supper, its significance and the qualifications for partaking of it.

*Pastoral duties* — Call to the ministry; settlement; public worship; subject matter of preaching; administration of ordinances; social religious meetings; pastor and Sunday school; the pastor as an organizer of the social and religious forces of the church; pastoral visitation; studies of a pastor; personal spirit and life.



## Homiletics

The course in this department extends through two years. It furnishes stated exercises to secure on the part of the student a mastery of principles and methods, and to form in him correct habits in the preparation and delivery of sermons. These exercises consist of recitations from standard treatises, with lectures, elucidations and criticism; carefully prepared analyses and written criticisms by the student, of sermons by eminent preachers; presentation of plans of sermons before the class, with criticism by students and by the officer; and the preparation and delivery of sermons before the seminary, with criticism by students and officer.

In all cases of criticism before the classes and the seminary, in addition to the negative criticism to which the student is subjected, the professor holds himself responsible for an independent treatment of the text, or the subject, that the student may not be left conscious simply of his defects and errors, but may have suggested to him a method by which he may improve his own ideal and work.

Hours per week	FULL COURSE	Hours per week	GREEK AND ENGLISH COURSE	Hours per week	ENGLISH COURSE
JUNIOR YEAR					
2	New Testament introduction and hermeneutics	2	New Testament introduction and hermeneutics	2	New Testament introduction and hermeneutics
3	Greek exegesis	4	New Testament Greek	3	Church history
3	Church history	3	Church history	4	Homiletics
2	Old Testament introduction and hermeneutics	2	Old Testament introduction and hermeneutics	2	Old Testament introduction and hermeneutics
3	Hebrew	2	Bible history	2	Bible history
MIDDLE YEAR					
4	Homiletics	4	Homiletics	4	Theology
3	Church history	3	Church history	2	Homiletics (second and third terms)
4	Greek or Hebrew exegesis	4	Greek or English (Old Testament) exegesis	2	Church history (first term)
1	Septuagint version	1	Septuagint version	2	Pastoral theology (first and second terms)
SENIOR YEAR					
4	Theology	4	Theology	4	Exegesis (New or Old Testament alternately)
2	Homiletics (second and third terms)	2	Homiletics (second and third terms)		
2	Church history (first term)	2	Church history (first term)		
2	Pastoral theology (first and second terms)	2	Pastoral theology (first and second terms)		
4	Hebrew or Greek exegesis	4	English or Greek (Old Testament) exegesis		

<sup>1</sup> A third year may be added, in which case second and third years are identical with Greek and English course.



## REQUIREMENTS FOR GRADUATION

Examinations are conducted at the close of the year before a committee appointed by the trustees; a favorable report of this committee is necessary for graduation.

## ADDITIONAL INFORMATION

Hamilton Theological Seminary was originally established by the Baptist Education Society which was incorporated in 1819. Colgate University was separately incorporated, but the two were gradually united and the Seminary appears as a department of the university for the first time in 1890.

## AUBURN THEOLOGICAL SEMINARY

*Auburn*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

14 Ap 1820 Incorporated by legislature.

### TRUSTEES

Elected

1855	President, Rev. Albert T. Chester, D. D . . . . .	Buffalo
1865	Vice-President, Rev. Levi Parsons, D. D . . . . .	Mt Morris
1887	Treasurer and Secretary, James Seymour, jr . . . .	Auburn
1873	Edward C. Selover . . . . .	"
1874	Hon. Charles C. Dwight, LL. D . . . . .	"
1874	Robert A. Nelson . . . . .	"
1876	Rev. J. J. Porter, D. D . . . . .	Phelps
1882	Henry A. Morgan . . . . .	Aurora
1885	Rev. Henry Darling, D. D., LL. D . . . . .	Clinton
1887	Rev. Charles C. Hemenway . . . . .	Auburn
1887	Hon. William E. Hughitt . . . . .	"
1889	George C. Buell . . . . .	Rochester
1889	Robert L. Drummond . . . . .	Auburn

## APPOINTED DURING YEAR

1890	Rev. George B. Spaulding, D. D. ....	Syracuse
1890	Rev. A. V. V. Raymond, D. D. ....	Albany

## VACANCIES

Rev. John McC. Holmes, D. D. Albany, term expired 8 My 1890.

## ADMINISTRATION

Figures in column at left give first year of service in Auburn.

1856	Treasurer, James Seymour, jr, 115 North st.
	Assistant Treasurer, W. H. Meaker, 14 Nelson st.
1871	Secretary, Willis J. Beecher, D. D., 183 Genesee st.

B. A. Hamilton 1858, M. A. 1861, D. D. 1875; Professor of moral science and belles lettres, Knox College, 1865-69; Member Society Biblical Literature and Exegesis, National Academy of Theology, American Institute of Sacred Literature; Author Farmer Tompkins and his Bible, 1874, Drill lessons in Hebrew, 1883, The postexilic history of Israel.

Educational Secretary and Librarian, E. A. Huntington.

Auditor, Edward C. Selover.

Superintendent of Buildings, Timothy G. Darling, D. D.

## INSTRUCTION

Figures in column at left give first year of service in Auburn and years spent in teaching.

1847	Samuel Miles Hopkins, D. D. Hyde Professor of Ecclesi-
44	astical History and Church Polity, 12 Seminary st.

M. A. Amherst 1832, D. D. 1854; Author Manual of church polity.

1855	Ezra A. Huntington, D. D., LL. D. Taylor, Seymour and
40	Iverson Professor of Biblical Criticism, 11 Seminary st.

B. A. Union 1832, M. A. 1836; D. D. Columbia 1846; LL. D. Lafayette College 1883; Author Notes on the Epistle to the Hebrews, A survey of the modern lives of Jesus.

1871	Willis J. Beecher, D. D. Professor of Hebrew Language
26	and Literature, 183 Genesee st.

See also "Administration."

- 1880 Anson J. Upson, D. D., LL. D. Emeritus Professor of  
32 Sacred Rhetoric and Pastoral Theology, Glens Falls.

B. A. Hamilton 1843, M. A. 1846, D. D. 1870; LL. D. Union 1880;  
Tutor, Hamilton 1845-49, Adjunct professor of rhetoric and  
moral philosophy, 1849-53, Professor of logic, rhetoric and  
elocution, 1853-70; Regent University of the State of New  
York 1874-, Vice-chancellor 1890-.

- 1884 James Stevenson Riggs, D. D. Professor of Biblical Greek,  
6 33 Seminary st.

B. A. Princeton 1874, M. A. 1877, D. D. 1888; Member Society  
of Biblical Literature and Exegesis.

- 1888 Timothy G. Darling, D. D. Richards Professor of Christian  
Theology.

B. A. Williams 1864, D. D. 1878; Acting professor of mental  
philosophy and Hebrew, Union 1880-84, Professor of moral  
science 1884-85, Professor of New Testament Greek 1885-86,  
Lecturer on Christian evidence 1886-87; Bellamy and Edwards  
professor of sacred rhetoric and pastoral theology, Auburn  
Theological Seminary, 1887-90, Richards professor of Christ-  
ian theology 1890-.

#### VACANCIES

Ransom B. Welch, D. D., LL. D. Professor of Christian the-  
ology. Died 29 Je 1890.

#### PROMOTIONS

##### In title alone

Timothy G. Darling, D. D. Professor of Christian theology from  
professor of sacred rhetoric and pastoral theology, 15 Jl 1890.

#### HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

#### PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

43 students have had beneficiary scholarships, yielding from  
\$100 to \$200 a year each. (Names not reported.)

#### REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The Auburn curriculum is selected on the theory that a theological seminary is not mainly a university department for the use of specialists in certain branches of study, but a training school to prepare men for the actual work of the ministry. It aims to give the student a general view of theological science in its various branches; to furnish him thoroughly in knowledge and discipline in the points that are more directly connected with his duties in the pastorate; to prepare him with a sound foundation for any special studies which he may have a call to pursue; and to afford him such facilities for special studies as may be consistent with these other aims.

*Junior year*

*Hebrew and the Old Testament*—Hebrew begun, using drill lessons in Hebrew with some approved grammar. Practical exegesis of selected passages; special instruction in the current Sunday school lessons and in the psalms; study of Old Testament geography, archeology, criticism and bibliography in connection with the passages read. Juniors who have studied Hebrew before entering the seminary recite, if they prefer, with the advanced class in Hebrew.

*Biblical criticism and the New Testament*—The Canon of the Old and New Testaments; the Apocrypha; text criticism, its sources and results, with an account of the different schools of criticism. Critical and exegetical reading of Romans, as compared with Galatians.

*Biblical Greek and the New Testament*—Study of the Hellenistic idiom, with reading of one of the Gospels; harmony of the Gospels; New Testament geography, illustrated with the stereopticon; historical introduction to New Testament times, including the preparation of Palestine, the growth of the Jewish schools and parties, Roman interference, etc. The authorities used are Winer, Buttman, Cremer, Schürer, Hausrath and others, and for geography the maps and work of the Palestine Exploration Society.

*Systematic theology*—Introductory lectures on theological science; critical examination of questions in mental and moral science; skepticism, especially in its later forms; principles of



Christian belief (text book, Faith and modern thought, by Professor Welch); lectures on the character and evidential force of prophecy and miracle as tested by scientific criticism; lectures on natural theology, with review of current discussions in theism; lectures on bibliology, including the genuineness, authenticity, credibility and inspiration of the Scriptures, with special reference to recent theories.

*Church history* — Church history to the pontificate of Gregory the Great.

*Sacred rhetoric and pastoral theology* — Extemporaneous expositions and applications of Scripture, with suggestions and criticisms; exercises in the reading of the Scriptures and of hymns. Lectures on the call to the ministry, the ministerial office, its demands in relation to preparation, character, habits of study, devotion, etc.

### *Middle year*

*Christian theology* — Biblical theology: the being and attributes of God; the divine unity and trinity; the divine plan and purpose; God's works of creation and providence. Anthropology; man's origin, nature, primitive state, probation and apostasy; human sin, original and actual; guilt and imputation; the covenant of works and the covenant of grace; the threefold vindication of the divine government; the human will, ability and inability; necessity, moral and natural. Soterology (a) Christology (b) soteriology. Christology: The person of Christ, the incarnate Logos as divine and human; His offices; His humiliation and exaltation; His character and kingdom; heresies concerning the person of Christ. Soteriology: The atonement, its nature, necessity and perfection; election, different theories reviewed, objections answered; regeneration, its nature and author; faith; repentance; justification; adoption; sanctification; perseverance; means of grace, especially prayer, its duty and efficacy, objections considered. Ecclesiology: Under this general division only the sacraments and ordinances are treated of in this department.

*Sacred rhetoric and pastoral theology* — Instruction, both oral and by text book, on the materials and methods of preaching and the construction of the different species of sermons. Practical applications of principles in the preparation of sermon plans on texts assigned, with discussion and criticism of the same in the class room. Exercises in extemporaneous preaching. Private

criticism of written sermons by the professor. Lectures on the theory and conduct of public worship.

*Church history* — Mediæval church history, and doctrine history, including the Arian, Nestorian, and Pelagian controversies, and a view of the theological systems and methods of Peter Lombard and Thomas Aquinas. Modern church history.

*Biblical criticism and the New Testament* — Biblical interpretation, its various systems and its established principles and rules; Greek literature, before and after Christ, by Greeks proper, Jews and the Christian fathers, in its bearing on the study of the language of the New Testament. Critical and exegetical reading of Ephesians compared with Colossians and other Pauline Epistles.

*Biblical Greek* — The work of this year includes a course of lectures on exegetical method, and the application of the principles of the same by the students to assigned passages of Scripture. The aim of this work is to answer the question, How can I most efficiently for my ministry study the New Testament? With the critical reading of one of the Pauline Epistles, the subject of Old Testament quotations in the New Testament will have attention.

*Hebrew and the Old Testament* — Students from all the classes, if they are qualified, may work in the advanced Hebrew class. This class has three sections; the exegetical section meets once a week, for translation and critical work; the grammar section meets twice a week, for reading with grammatical review, more advanced work in syntax, etc.; the section in sight reading meets twice a week. Students attend in one or more of the sections, as they prefer, but the attendance and work in these classes is as strictly required from those who elect them as any other seminary work. Thus the student who desires it has from one to five hours of Hebrew a week throughout the middle and senior years. In Syriac or Aramaic, special classes are formed for students who desire them.

### *Senior year*

*Sacred rhetoric and pastoral theology* — Sacred rhetoric: critical exercises in analysis and construction of sermons continued; preaching, both extemporaneous and from manuscript, with criticism before the class during the entire year; critical essays on successful preachers; exercises in impromptu speaking. Private

personal drill is given in the reading of the Scriptures and of hymns and in the delivery of sermons. Pastoral theology: lectures extending through the year, covering the choice of a field; missionary obligation; the pastor's various relations to his flock, to the church courts, and to the benevolent schemes of the church; the care of the prayer-meeting, Sabbath school and church societies; development of Christian work; administration of the sacraments; revivals of religion and occasional services.

*Church history and polity* — Church polity: Its principles; the form of government and the history of the presbyterian church; church parliamentary law.

*Old testament* — The canon; the prophets and their functions; the Old Testament books, their literary structure, the history recorded in them, their authorship; the secondary Jewish literature and its testimony to the Bible; Old Testament text, versions, and text criticism; questions in higher criticism; criticism and inspiration. Hebrew and Syriac or Aramaic as in middle year.

*Biblical criticism and the New Testament* — Reading of Hebrews in comparison with the Gospels and with the modern lives of Jesus. Discussion of particular New Testament topics, including the synoptic Gospels, the Gospels by John, the harmony of the Gospels, disputed passages in the Gospels and other books, the genealogies of Jesus, the last supper, etc.

*Christian theology* — Eschatology: death and immortality; the intermediate state; the resurrection; the judgment; final rewards and penalties; the consummation; followed by a critical study in the Westminster confession, as a final review of systematic theology.

*Biblical Greek* — During the entire year written expositions of Scripture — the results of careful, independent study of the Greek — are required and are presented to the class for criticism. One of the Epistles is critically read and the literary problems of the New Testament are discussed.

#### GRADUATE STUDIES

The seminary will afford all needed facilities to men who desire to extend their theological studies beyond the prescribed course of three years. The course of the fourth year will be arranged with reference to the special studies which applicants desire to pursue.



## VOCAL AND PHYSICAL TRAINING

Such students as choose take special training with a competent instructor in voice building and elocution.

A class in practical gymnastics has been conducted in a room fitted up for the purpose in the library building.

## SACRED MUSIC

During the current year the students have had weekly instruction and drill in sacred music in two classes.

## SYNOPSIS

Hours per week	JUNIOR YEAR	Hours per week	MIDDLE YEAR	Hours per week	SENIOR YEAR
4	Hebrew and the Old Testament	5	Christian theology	4	Sacred rhetoric and pastoral theology
2	Biblical criticism and the New Testament	2	Sacred rhetoric and pastoral theology	2	Church history and polity
2	Biblical Greek (first term)	3	Church history	2	Old Testament
3	New Testament (second term)	2	Biblical criticism and the New Testament	2	Biblical criticism and the New Testament
2	Systematic theology	2	Biblical Greek, Hebrew and the Old Testament (optional)	2	Christian theology
2	Church history			2	Biblical Greek (first term)
2	Sacred rhetoric (first term)				
1	Pastoral theology (second term)				

## REQUIREMENTS FOR GRADUATION

Those students are allowed to graduate who have pursued the regular three years course and passed the examination.

## BUILDINGS

Main building, three story stone, built 1820, floor area 15,750 sq. ft., two class rooms, 40 seats. Dormitory, five story stone, built 1875, floor area 48,600 sq. ft., one class room, 50 seats, value \$100,000. Library, three story stone, built 1871, value \$35,000; museum room, floor area 368 sq. ft., both in main building. Huntington House, two story brick, built 1862, floor area 4,758 sq. ft., value \$5,000. Richards House, three story brick, built 1877, floor area 6,909 sq. ft., value \$8,000. Johnson House, two story brick, built 1875, floor area 4,380 sq. ft., value \$7,500.



## GENERAL THEOLOGICAL SEMINARY

*Chelsea square, New York*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month    Year

27 My 1817 Established by General Convention.

13 S 1820 Removed to New Haven, Ct.

1821 Constitution adopted by General Convention.

13 F 1822 Returned to New York.

5 Ap " Incorporated by legislature as the General Theological Seminary of the Protestant Episcopal church in the United States.

10 Ap 1869 Legislature gave power to confer degrees.

## TRUSTEES

President, the oldest bishop present

Treasurer, Elihu Chauncey . . . . . 22 E. 22 st.

Secretary, Rev. T. S. Drowne, D. D. Flatbush

## BISHOPS

Rt. Rev. William Ingraham Kip, D. D., LL. D., San Francisco

" Alexander Gregg, D. D., LL. D. . . . . Austin, Texas

" Richard H. Wilmer, D. D., LL. D. . . . Mobile, Ala.

" Arthur Cleveland Coxe, D. D., LL. D. Buffalo

" Henry A. Neely, D. D. . . . . . Portland, Me.

" Daniel S. Tuttle, D. D. . . . . . St Louis, Mo.

" William H. A. Bissell, D. D. . . . . Burlington, Vt.

" Benjamin W. Morris, D. D. . . . . . Portland, Or.

" Abram N. Littlejohn, D. D., LL. D. . . . Garden City

" William Crosswell Doane, D. D., LL. D. Albany

" Frederick D. Huntington, D. D. LL. D. Syracuse, N. Y.

" Ozi William Whitaker, D. D. . . . . . Philadelphia

" Henry N. Pierce, D. D., LL. D. . . . . Little Rock, Ark.

" William Woodruff Niles, D. D. . . . . Concord, N. H.

" M. A. DeW. Howe, D. D. LL. D. . . . . Reading, Pa.

" Benjamin H. Paddock, D. D. . . . . Boston

" Theodore B. Lyman, D. D., LL. D. . . . Raleigh, N. C.

Rt. Rev. John F. Spalding, D. D. ....	Denver, Col.
“ William Forbes Adams, D. D. ....	Easton, Md.
“ Thomas Underwood Dudley, D. D., D. C. L. ....	Louisville, Ky.
“ John Scarborough, D. D. ....	Trenton, N. J.
“ George D. Gillespie, D. D. ....	Grand Rp'ds, Mich.
“ Thomas A. Jagger, D. D. ....	Cincinnati
“ William E. McLaren, D. D., D. C. L.	Chicago
“ William Stevens Perry, D. D., LL. D., D. C. L. ....	Davenport, Ia.
“ Alexander Burgess, D. D. ....	Galesburg, Ill.
“ George William Peterkin, D. D. ....	Park'rsburg, W. Va.
“ George F. Seymour, D. D., LL. D. ...	Springfield, Ill.
“ Thomas A. Starkey, D. D. ....	East Orange, N. J.
“ John A. Paddock, D. D. ....	Tacoma, Wash.
“ Cortlandt Whitehead, D. D. ....	Pittsburgh, Pa.
“ David B. Knickerbacker, D. D. ....	Indianapolis, Ind.
“ Henry C. Potter, D. D., D. C. L. ....	29 Lafayette st.
“ William D. Walker, D. D., LL. D., D. C. L. ....	Fargo, Dak.
“ Alfred A. Watson, D. D., D. C. L. ....	Wilmington, N. C.
“ Nelson S. Rulison, D. D. ....	Bethlehem, Pa.
“ William Paret, D. D., LL. D. ....	Baltimore, Md.
“ Abiel Leonard, D. D. ....	Salt Lake C'y, Utah
“ George Worthington, D. D., LL. D. ...	Omaha, Neb.
“ Edwin Gardner Weed, D. D. ....	Jacksonville, Fla.
“ Ethelbert Talbot, D. D., LL. D. ....	Laramie City, Wyo.
“ Leighton Coleman, D. D., LL. D. ....	Wilmington, Del.
“ Cyrus F. Knight, D. D., D. C. L. ....	Milwaukee, Wis.
“ William A. Leonard, D. D. ....	Cleveland, O.
“ Thomas F. Davies, D. D. ....	Detroit, Mich.

## Elected

1885 Dean, Very Rev. Eugene A. Hoffman, D. D., D. C. L. ....	1 Chelsea sq.
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## CHOSEN BY DIOCESES

*New York*

1885 Rev. Alfred B. Beach, D. D. ....	Cooperstown
1885 W. Bayard Cutting ....	32 Nassau st.
1885 Prof. Henry Drisler, LL. D. ....	48 W. 46 st.

## Elected

1885	Rev. C. F. Hoffman, D. D. ....	51 W. 53 st.
1885	Woodbury G. Langdon .....	719 Fifth av.
1885	Rev. James Mulchahey, D. D. ....	29 Vesey st.
1885	Stephen P. Nash.....	67 Wall st.
1885	Rev. Henry Y. Satterlee, D. D. ....	103 E. 21 st.
1885	Rev. C. C. Tiffany, D. D. ....	241 Madison av.
1885	Cornelius Vanderbilt .....	Grand Central Depot

*Western New York*

1885	John N. Macomb, jr.....	Branchport
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*Long Island*

1885	Rev. T. Stafford Drowne, D. D..	Flatbush
1885	Rev. Samuel M. Haskins, D. D..	150 S. Fifth st., Brooklyn

*Albany*

1885	Rev. Joseph Carey, D. D. ....	Saratoga Springs
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*Central New York*

1885	Rev. William T. Gibson, D. D. ....	Utica
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*New Jersey*

1885	Rev. Elvin K. Smith.....	Lambertville
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*Newark*

1885	Rev. William G. Farrington, D. D. ....	Orange, N. J.
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*Massachusetts*

1885	Rev. Charles L. Hutchins, D. D. ....	Concord, Mass.
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*Pennsylvania*

1885	Rev. Edward Y. Buchanan, D. D.	1324 Pine st., Philadelphia
1885	J. Vaughan Merrick .....	Roxborough, Pa.

*Maryland*

1885	Rev. I. L. Townsend, D. D. ...	1418 Corcoran st., Washington
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*North Carolina*

1885	Rev. D. Hillhouse Buel, D. D. ....	Nashville
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*South Carolina*

## Elected

- 1885 Rev. Benjamin Allston . . . . . Plantersville  
 1885 Rev. William H. Hanckel . . . . . Abbeville

## CHOSEN BY THE HOUSE OF DEPUTIES

- 1889 Henry P. Baldwin . . . . . Detroit, Mich.  
 1889 Rev. John W. Brown, D. D. . . . . 1 W. 53 st.  
 1889 Elihu Chauncey . . . . . 22 E. 22 st.  
 1889 Rev. Henry A. Coit, D. D. . . . . Concord, N. H.  
 1889 Rev. Morgan Dix, D. D.,  
     D. C. L. . . . . 27 W. 25 st.  
 1889 Rev. Heman Dyer, D. D. . . . . 2 Bible House  
 1889 Elbridge T. Gerry . . . . . 261 Broadway  
 1889 Rev. Charles H. Hall, D. D. . . . . 157 Montague st., Brooklyn  
 1889 Henry Hayes . . . . . Newark, N. J.  
 1889 Rev. J. S. B. Hodges, D. D. . . . . Baltimore  
 1889 George A. Jarvis . . . . . 491 Henry st., Brooklyn  
 1889 Hon. John A. King . . . . . Great Neck  
 1889 Robert A. Lambertson, LL.D. . . . . South Bethlehem, Pa.  
 1889 Rev. William S. Langford,  
     D. D. . . . . 22 Bible House  
 1889 Rev. Clinton Locke, D. D. . . . . Chicago  
 1889 George C. McWhorter . . . . . Oswego  
 1889 Rev. Robert N. Merritt,  
     D. D. . . . . Morristown, N. J.  
 1889 Rev. William H. Moore,  
     D. D. . . . . Hempstead  
 1889 Henry E. Pierrepont . . . . . 216 Columbia Height, Brooklyn  
 1889 Rev. Eliphalet N. Potter,  
     D. D., LL. D., D. C. L. . . . . Geneva  
 1889 Rev. James Rankine, D. D. . . . . Geneva  
 1889 George C. Shattuck, M. D. . . . . Boston  
 1889 Rev. G. Williamson Smith,  
     D. D., LL. D. . . . . 115 Vernon st., Hartford  
 1889 John Hobart Warren . . . . . Troy

## VACANCIES

- John H. Schoenberger, New York, died 1889  
 Rev. C. E. Snope, D. D., New York, died 11 Mr 1890



## ADMINISTRATION

Figures in column at left give first year of service in General Theological Seminary.

1879 Dean, Very Rev. Eugene Augustus Hoffman, D. D. 1  
Chelsea sq.

B. A. Rutgers 1847, Harvard 1848; M. A. Rutgers 1850, Harvard 1851; D. D. Rutgers 1863, Racine College 1882, General Theological Seminary 1885, Columbia 1886; Member American Geographical Society, Archæological Institute of America, American Institute of Christian Philosophy, New York Genealogical and Biographical Society; Author Free churches, The Eucharist week.

1873 Sub-Dean, Rev. Andrew Oliver, D. D., S. T. D., 4 Chelsea sq.

B. A. and M. A. Harvard; S. T. D. Hobart 1868, St Stephen's 1876, General Theological Seminary 1885; Professor of Greek and Hebrew, St Stephen's 1864-73; Translator Peshito Syriac psalter.

Treasurer, Elihu Chauncey. 22 E. 22 st.

1868 Secretary, Rev. Randall C. Hall, D. D., S. T. D. 245 W. 48 st.

B. A. Columbia 1863, M. A. 1866; S. T. D. Racine College 1881, General Theological Seminary 1884; Instructor in Hebrew, General Theological Seminary 1869-71, Professor of Hebrew and Greek 1871- ; Member American Philological Association; Author Some elements of Hebrew grammar, 1882.

1889 Librarian, Rev. Edward H. Jewett, D. D., LL. D., 2  
Chelsea sq.

B. A. Hobart 1855, M. A. 1858; S. T. D. Racine College 1875, General Theological Seminary 1889; LL. D. Hobart 1890; Member Society of Biblical literature and exegesis, American Institute of Christian Philosophy, Committee on "Versions," American Bible Society.

1887 Bursar and Assistant Librarian, Charles Bull, M. E.,  
Chelsea sq.

M. E. Lehigh University 1878.

Physician, William F. Cushman, 325 W. 22 st.

Superintendent, Fenton E. West, Jarvis Hall.

Matron, Mrs Katharine Hopper, 10 West Building.

## INSTRUCTION

Figures in column at left give first year of service in General Theological Seminary and years spent in teaching.

- 1879 Very Rev. Eugene Augustus Hoffman, D. D. Dean on the  
12 "Samuel Verplank Hoffman" Foundation.

See also "Administration."

Rev. William E. Eigenbrodt, D. D. "Eugene A. Hoffman"  
Emeritus Professor of Pastoral Theology, 127 W. 13 st.

- 1871 Rev. Samuel Buel, D. D., S. T. D. Emeritus Professor  
of Systematic Divinity and Dogmatic Theology, 344  
W. 18 st.

M. A. Williams 1836; S. T. D. Columbia 1862, General Theologi-  
cal Seminary 1885; Professor of ecclesiastical history and  
divinity, Seabury Hall 1867-71; Author Apostolic system of  
the Church defended, Treatise of dogmatic theology.

- 1868 Rev. Randall C. Hall, D. D. "Clement C. Moore" Professor  
28 of the Hebrew and Greek languages.

See also "Administration."

- 1873 Rev. Andrew Oliver, D. D., S. T. D., Sub-Dean and Professor  
27 of Biblical Learning and the Interpretation of Scripture.

See also "Administration."

- 1886 Rev. William J. Seabury, D. D. "Charles and Elizabeth  
19 Ludlow" Professor of Ecclesiastical Polity and Law, 144  
W. 14 st.

B. A. and M. A. Columbia; S. T. D. Hobart 1876, General  
Theological Seminary 1885; Editor Discourses and other  
papers of Rev. Samuel Seabury, D. D.; Author Suggestions  
in aid of devotion.

- 1878 Rev. Thomas Richey, D. D. "St Mark's Church in  
20 the Bowery" Professor of Ecclesiastical History, 5  
Chelsea sq.

M. A. St James College 1853; D. D. Union 1863; Author Truth  
and counter-truth, 1869, The Nicene Creed and the Filioque,  
1884, The parables of the Lord Jesus, 1888.

- 1889 Rev. Edward H. Jewett, D. D. Librarian and "Eugene A.  
2 Hoffman" Professor of Pastoral Theology.

See also "Administration."

1889 Rev. G. H. S. Walpole, M. A. Professor of Systematic  
9 Divinity and Dogmatic Theology, 412 W. 20 st.

B. A. Trinity College, Cambridge, England 1877, M. A. 1880;  
First class theological tripos, Cambridge 1877; Evans Prize-  
man 1877; Tutor Schola Cancellarii, Truro 1877-82; Warden,  
St John's College, Auckland, New Zealand 1884-85.

1889 Rev. Philander K. Cady, D. D. Alumni Professor of the  
2 Evidences of Revealed Religion, Jarvis Hall.

B. A. Woodward College 1847; M. A. Trinity 1856; S. T. D. Col-  
umbia 1868.

1880 Rev. Francis T. Russell, M. A. Instructor in Reading the  
46 Church Service and Delivery of Sermons.

M. A. 1856; Professor of Oratory, Trinity 1853-75; Professor of  
oratory and rhetoric, Hobart 1863-68; Instructor in elocution  
of Church service, Berkeley Divinity School 1854-

1889 G. Edward Stubbs, M. A. Instructor in Music.

1889<sup>1</sup> Rt. Rev. Hollingworth Tully Kingdon, D. D. "Bishop  
Paddock" Lecturer on God Incarnate.

APPOINTED DURING YEAR

Rev. G. H. S. Walpole, M. A. Professor of systematic divinity.

Rev. Philander K. Cady, D. D. Professor of evidences of  
revealed religion.

G. Edward Stubbs, M. A. Instructor in music.

HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Pierre Jay prize, William Walter Smith, B. A., New York..	\$100
Greek Alumni prize, Leighton Hoskins, M. A., " ..	30
Alumni prize in ecclesiastical history, Lewis Cameron, Ph. B., Newark .....	20
Seymour prize, Harvey Sheafe Fisher, B. A., Pennsylvania	140

REQUIREMENTS FOR ADMISSION

See table 3.

<sup>1</sup> Special lecturer appointed for the year only.

## COURSES OF STUDY

HEBREW AND GREEK	EXEGESIS	ECCLESIASTICAL HISTORY	SYSTEMATIC DIVINITY	PASTORAL THEOLOGY	ECCLESIASTICAL POLITY AND LAW
Tregelles' heads of Hebrew grammar; Readings from the Pentateuch and the psalms; Gesenius' Hebrew lexicon; Readings from the Septuagint	The four gospels; Acts of the apostles; Gardiner's harmony of the gospels	First six centuries: Mahan, Blunt, Burton and Robertson's Church histories; Bates' lectures on Christian antiquities; Mosheim's commentaries	JUNIOR YEAR		
			Bishop Butler's sermons at the rolls; Christian ethics; Adams' elements of Christian science	Gresley's Ecclesiastes Anglicanus; Brooks' lectures on preaching; Bishop Ellicott's collections on homiletics; lectures on homiletics by the professor	
Readings from the Messianic psalms, and extracts from the prophets; Gesenius' Hebrew lexicon	The epistles of St Paul, with Ellicott's and Lightfoot's commentaries	Seventh to 15th centuries inclusive Hammond on the Canon; Newman's history of the Arians; Hardwick's middle ages; Robertson's Church history; Milman's Latin Christianity	MIDDLE YEAR		
			Pearson on the Creed; Hooker on the Incarnation	Blunt's Parish priest; Bishop Burnet on pastoral care; Bishops White and Wilberforce on the ordinal; Bishop Ellicott's collections on pastoral work; Lectures on pastoral duties by the professor	Abp. Potter on Church government; Wordsworth's outline of the Christian ministry
Christological portions of the Old Testament in Hebrew, with commentaries	16th century to present time. Hardwick's Reformation; Burnet's history of the English reformation; Gay's history and Perry's histories of the English church; Perry's and Wilberforce's histories of the American church.	16th century to present time. Hardwick's Reformation; Burnet's history of the English reformation; Gay's history and Perry's histories of the English church; Perry's and Wilberforce's histories of the American church.	SENIOR YEAR		
			Bishop Browne on the 39 articles	Wheatly and Procter on the book of common prayer; Hooker's Ecclesiastical polity, book 5; Lectures on liturgics and pastoral work, conscience and human law by the professor	Hadden's Apostolical succession; Canons and other ecclesiastical laws
			Six sermons by each student	Five sermons by each student	Lectures by the professor, with exercises on books of reference



## REQUIREMENTS FOR GRADUATION

The faculty recommends for the degree of bachelor in sacred theology graduating members of the senior class whose average grade of marks during their seminary course has not fallen below *nine*, and who are deemed otherwise worthy of the reward. Those to whom the degree is thus awarded are required to present to the dean before the conferring of the degree an original essay in Latin on some subject approved by the faculty.

The examination for the degree of bachelor in sacred theology is on the following subjects: (*To be written or oral as the committee shall determine*)

1 — *Exegesis* — The first 25 chapters of Isaiah, the Gospels, the Acts of the Apostles and the Epistle to the Romans — all in the original, with exegesis of such portions as may be required; The canon of the Old and New Testament and contents of both.

2 — *Ecclesiastical history* — History of the Christian Church to the close of the second Council of Nice; History of the Church of England.

3 — *Systematic divinity* — Articles of the Apostles' creed; The doctrine of the sacraments; Soteriology.

4 — *Apologetics*.

5 — *Liturgics*.

6 — *Ecclesiastical polity and law*.

The examination for the degree of doctor in sacred theology is on the Psalms, Isaiah and the New Testament — all in the original, with exegesis of such portions as may be required.

The candidate must also present theses (one of which must be in Latin or Greek) on two of the following subjects, to be selected by himself, except that both subjects must not be selected from the same class.

1 — *Ecclesiastical history* — 1 The authority of the general council; 2 The growth of the papal power; 3 The reformation.

2 — *Systematic divinity* — 1 Original sin; 2 Justification; 3 The doctrine of the sacraments; 4 Eschatology.

3 — *Apologetics* — 1 The internal evidences of Christianity; 2 The place of the miracles in Christian revelation; 3 The relation of Christianity to non-Christian faiths.

4 — *Liturgics* — The original sources of the Book of common prayer.

5 — *Ecclesiastical polity and law* — The being and order of the Church considered as a divine institution.

### BUILDINGS

Chapel, brick and stone, built 1888, 500 seats, value \$150,000. Five dormitories, brick and stone, value \$100,000. Class room building, three story, brick and stone, built 1884, six class rooms, 300 seats, value \$60,000. Library, two story brick and stone, built 1885, value \$60,000. Gymnasium, brick and stone, built 1889. President's house, four story, brick and stone, built 1886, value \$35,000.

## UNION THEOLOGICAL SEMINARY IN THE CITY OF NEW YORK

*Lenox Hill, Park av., New York*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
18 Ja	1836	Union Theological Seminary founded.
18 D	1836	Seminary opened for instruction.
27 Mr	1839	Legislature incorporated Union Theological Seminary in the city of New York.
My	1890	Voluntary alliance formed with University of the City of New York.

### TRUSTEES

President, Charles Butler, LL. D.

Vice-President, John Crosby Brown

Treasurer, Recorder and General Secretary, E. M. Kingsley, 700 Park av.

William A. Booth

Henry Day

Rev. Charles A. Dickey, D. D.

Rev. David R. Frazer, D. D.

Rev. Thomas S. Hastings, D. D., LL. D.

Rev. John McC. Holmes, D. D.  
 D. Willis James  
 William A. Wheelock  
 Rev. Stephen W. Dana, D. D.  
 Rev. James Hall McIlvaine, D. D.  
 Rev. Charles H. Parkhurst, D. D.  
 Rev. Erskine N. White, D. D.  
 William E. Dodge  
 Rev. Charles Cuthbert Hall, D. D.  
 Rev. John Hall, D. D., LL. D.  
 John Taylor Johnson  
 David H. McAlpin  
 Rev. Robert Russell Booth, D. D.  
 Rev. Edward L. Clark, D. D.  
 William W. Hoppin, jr  
 Morris K. Jesup

#### APPOINTED DURING YEAR

Rev. James M. Ludlow, D. D.  
 Rev. Wilton Merle Smith, D. D.

#### ADMINISTRATION

Figures in column at left give first year of service in Union Theological Seminary.

1881 President, Rev. Thomas Samuel Hastings, DD., LL. D. 27  
W. 46 st.

B. B. Hamilton 1848, M. A. 1851; D. D. University of the City  
of New York 1865; LL. D. College of New Jersey 1888.

1874 Treasurer, E. M. Kingsley, 700 Park av.

Secretary, Rev. Francis Brown, M. A., Ph. D., D. D. 700  
Park av.

B. A. Dartmouth 1870, M. A. 1873; Ph. D. Hamilton 1884; D. D.  
 Dartmouth 1884; Fellow of Union Theological Seminary  
 1877-9; Teacher, Ayer's Latin School, Pittsburg 1870-2;  
 Teacher of Greek, Dartmouth 1872-4; Member American  
 Oriental Society, Society of Biblical Literature and Exegesis,  
 American Institute of Sacred Literature; Author (with Rev.  
 R. D. Hitchcock) Teaching of the 12 apostles, 1884; Published  
 Assynology, its use and abuse in Old Testament study, 1885;  
 Edited Lenormant's Beginnings of history, 1882.

Librarian, Rev. Charles R. Gillett, M. A.

## INSTRUCTION

Figures in column at left give first year of service in Union Theological Seminary and years spent in teaching.

- 1881 Rev. Thomas Samuel Hastings, D. D., LL. D. President  
9 and Brown Professor of Sacred Rhetoric, 27 W. 46 st.

See also "Administration."

- 1863 Rev. William Greenough Thayer Shedd, D. D., LL. D.  
46 Emeritus Professor of Systematic Theology, 148 E. 38 st.

B. A. University of Vermont 1839, M. A. 1843, D. D. 1857; LL. D. University of New York 1876; Professor of English literature, University of Vermont 1845-52; Professor of sacred rhetoric and pastoral theology, Auburn Seminary 1852-4; Professor of ecclesiastical history and pastoral theology, Andover Seminary 1854-62; Author History of Christian doctrine, 1863, Homiletics and pastoral theology, 1867, Sermon to the natural man, 1871, Theological essays, 1877, Literary essays, 1878, Commentary on Romans, 1879, Sermons to the spiritual man, 1884, Doctrine of endless punishment, 1885, Dogmatic theology, 1888, Revision of Westminster standard, 1890; Translator, Theremin's Rhetoric, 1850, Guericke's Church history, 1857, Augustine's Confessions, 1860; Edited Coleridge's complete works, 1853.

- 1869 Rev. Philip Shaff, D. D., LL. D. Washburn Professor of  
49 Church History, 15 E. 43 st.

B. D. University of Berlin 1841; D. D. Marshall College 1844, Berlin University 1854, University of St Andrews 1887; LL. D. Amherst 1876; Professor of theology, University of Berlin 1842, Theological Seminary, Mewersburg, Pennsylvania 1844; President American Society of Church History; Author Church history, Creeds of christendom, Bible dictionary. Editor Lange's Commentary. Nicene and Post-Nicene Library, Religious Encyclopedia, Encyclopedia of living divines, German hymn book, Christ in song, etc.

- 1873 Rev. George Lewis Prentiss, D. D. Skinner and McAlpin  
19 Professor of Pastoral Theology, Church Polity and Mission Work, 57 E. 61 st.

B. A. Bowdoin 1835, D. D. 1854; Gotham Academy 1835-36; Author Memoir of S. S. Prentiss, 1855, Our national bane, or The dry-rot in American politics, 1877, Life and letters of Elizabeth Prentiss, 1882.



Rev. Charles A. Briggs, D. D. Professor of Biblical Theology.

- 16 D. D. University of Edinburgh; Professor of Hebrew, Rutgers Female College 1874-90; Professor of Hebrew, Union Theological Seminary; Professor of Biblical Theology 1890-; Author Biblical study, Messianic prophecy, American presbyterianism, Whither?

Rev. Francis Brown, Ph. D., D. D. Davenport Professor of Hebrew and the Cognate languages, 700 Park av.

See also "Administration."

- 1888 Rev. Marvin Richardson Vincent, M. A., D. D. Baldwin Professor of Sacred Literature, 136 E. 37 st.

B. A. Columbia 1854, M. A. 1857; D. D. Union 1868; Classical instructor, Grammar School of Columbia 1854-8; Professor of Latin, Troy University 1858-62; First vice-president American Dante Society; Author Religion and amusement, 1867, Gates into the Psalm country, 1879, Faith and character, 1880, God and bread, 1884, In the shadow of the Pyrenees, 1883, The covenant of peace, 1887, Word studies in the New Testament, 1887-90; Translator and co-editor Bengel's sermons of New Testament, 1860.

Rev. Owen H. Gates, Ph. D. Assistant Professor of Biblical Philology.

Ph. D. University of Berlin.

- 1868 Rev. Adolphus F. Shauffler, M. A., D. D. Superintendent of Mission Work, 260 Fourth av.

B. A. Williams 1867, M. A. 1872; D. D. University of the City of New York 1887; Editor Peloubets teacher's quarterly for Sunday school work, New York city missions and tract society monthly.

- 1876 Charles Roberts, jr, LL. B. M. A. Harkness Instructor in  
26 Vocal Culture and Elocution, 15 E. 16 st.

B. A. College of the City of New York 1862, M. A. 1865; LL. B. Columbia Law School 1870; Tutor in English and Latin, College of the City of New York 1866-76.

Gerrit Smith, Mus. Doc. (England) Harkness Instructor in Sacred Music, 571 Park av.

#### PROMOTIONS

W. G. T. Shedd, D. D., LL. D. Emeritus Professor of systematic theology, from professor of the same.

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Philadelphia prize fellowship, Owen H. Gates, St Johns-bury, Vt.....	\$600
Schools prize fellowship, William Adams Brown, New York.	600
Hitchcock prize, William Adams Brown, New York.....	125

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course occupies three years of two terms each; students are admitted on a pledge to complete a full course here or elsewhere unless unavoidably prevented.

*Junior class — First term*

*Propædeutics* — Lectures on theological encyclopedia, methodology and bibliography.

*Philology* — (1) Introductory Hebrew grammar, with exercises in reading and writing Hebrew; (2) Translation of Hebrew and higher Hebrew Grammar for advanced class only; (3) Readings in the unpointed Hebrew text; (4) Grammar of the New Testament Greek, with readings from the Gospels of Matthew and Mark, including exercises in *ex tempore* reading.

*Exegesis* — (1) Exposition of select chapters of the Old Testament; (2) Exposition of the Gospel of Mark, with selections from Matthew.

The Gospels of Matthew and Mark entire are assigned for class-room work or private reading, and will be required at the examination.

*Biblical theology* — General introduction to the study of the Bible.

*Mission work* — Its aim, principles and claims, with outlines and biographical sketches of its history.

*Junior class — Second term*

*Philology* — (1) Exercises in Hebrew etymology and syntax, with sight-reading; (2) Grammar of the New Testament Greek, with readings from the Gospel of Luke and the Acts of the Apostles, including exercises in *ex tempore* reading.

*Exegesis* — (1) Exposition of selections from the Pentateuch; (2) Exposition of the later historical books of the Old Testament, with special reference to their illustration from Assyrian and Babylonian history; (3) Critical exercises in the Hebrew text, for the advanced class only; (4) Historical and critical introduction to the New Testament; (5) Exposition of the Gospel of Luke.

The Gospel of Luke and the Acts of the Apostles entire are assigned, and will be required in the examination. Critical and exegetical essays on New Testament subjects are prepared by the students.

*Biblical theology* — The history and religion of Israel, with a discussion of the principal institutions and laws, and exercises in the exposition of the English Bible.

*History* — Apostolical Christianity: the founding of Christianity among the Jews and Gentiles from Jerusalem to Rome.

*Church polity* — The New Testament idea and constitution of the Church of Christ: How far the ecclesiastical politics of later ages embody the same; Denominational organizations: How far justifiable; Presbyterianism; The sacraments.

*Vocal culture* — The class is divided into sections, and each section has exercises for the development, strengthening and management of the voice, and in the principles of expression in elocution as applied to the reading of extracts in prose and verse.

#### *Middle class — First term*

*Exegesis* — (1) Hebrew poetry: Exposition of selections of various kinds of poetry from the earlier periods of Hebrew history. (2) Exposition of the Gospel of John, with lectures on the Logos and the Johannine controversy, and special lectures on practical exposition as related to preaching. The entire Gospel and the Epistles of John are assigned, and will be required in the examination. Critical and exegetical essays are prepared by the students.

*Biblical theology* — Lectures on the canon, text and literature of the Old Testament.

*History* — Ancient Christianity: A. D. 100–600; Spread and persecution; Literary conflict with heathenism and heresy; Conversion of the Roman empire; Christian life; Development of doctrine and discipline; Patristic literature.

*Dogmatics* — Theological introduction: Method, nature and definition of theological science. Bibliology: Revelation and inspira-



tion, authenticity, credibility and canonicity of the Scriptures. Theology (proper) : Nature and definition of God ; Innate idea of God ; Arguments for the divine existence ; Trinity in unity.

*Apologetics* — Christ and his Apostles as defenders of the truth ; Sketch of the history of apologetics ; Grounds of the Christian evidence ; Strength of unbelief in our day and the best way to meet it.

*Homiletics* — Introductory instruction as to methods of pulpit preparation, with practical exercises.

*Vocal culture* — Exercises in the reading of the Scriptures and hymns.

*Middle class — Second term*

*Exegesis* — (1) Hebrew poetry : Exposition of selections from the later periods of Hebrew poetry, including portions of Proverbs, Job, Song of Songs and Ecclesiastes. (2) Exposition of Pauline Epistles (Corinthians, Galatians or Epistles of the imprisonment) ; One or more of the Epistles will be assigned for private reading, and required at the examination.

*Biblical theology* — Theology of the Old Testament, with exercises in the exposition of the English Bible.

*History* — Mediæval Christianity : A. D. 600–1500 ; Conversion of the barbarians of northern and western Europe ; Conflict with Mohammedanism ; Separation of the Greek and Latin churches ; The papacy and the Empire ; Revival of letters ; Preparation for the reformation.

*Dogmatics* — Theology (proper) : Divine attributes, decrees, creation, providence, miracles. Anthropology : Man's creation, primitive state, probation, apostacy, original sin.

*Homiletics* — Lectures with practical exercises. Plans of sermons are submitted not only for criticism by the class, but also for private criticism by the professor.

*Vocal culture* — Daily exercises in pulpit and platform speaking.

*Senior class — First term*

*Exegesis* — Exposition of select portions of the Prophets.

*Biblical theology* — The various types of theology in the writings of the New Testament, and their comprehension in a higher unity with exercises in the exposition on the English Bible.

*History* — Modern Christianity : A. D. 1500 to present time ; the reformation on the continent, in England and Scotland ; the Roman



Catholic counter-reformation; History of the Lutheran and Reformed churches; American church history.

*Dogmatics* — Christology: Christ's theanthropic person, divinity, humanity; Soteriology: Christ's mediatorial offices; vicarious atonement.

*Homiletics* — Lectures on the composition and delivery of sermons with practical exercises; Sermons delivered by each student both in private and before the class; At least two sermons must be thus submitted during the year by each member of the class.

*Pastoral theology* — Lectures on the calling, qualifications and work of the Christian pastor; on hymnology and psalmody.

*Catechetics* — The Christian instruction of the young, and their preparation for church ordinances, with special reference to the Westminster catechisms, including also a history of religious nurture and of the Sunday school.

*Vocal culture* — Exercises in pulpit and platform speaking.

#### *Senior class — Second term*

*Exegesis* — Exposition of the Epistle to the Romans, with lectures on practical exposition. The pastoral epistles, or the Epistle to the Hebrews are assigned for private reading, and will be required at the examination.

*Biblical theology* — The Messianic idea of the Old Testament and of the Jews, and its fulfilment in the Messiah of history; Messianic ideal of Christ and His Apostles; Exercises in the exposition of the English Bible.

*Symbolics* — Comparative theology: Exposition of the doctrinal differences between Romanism and protestantism, and among the various protestant churches.

*Dogmatics* — Soteriology: Regeneration, conversion, justification, sanctification; Eschatology: Intermediate state, second advent, resurrection, final judgment, heaven, hell.

*Christian ethics* — The moral principles of Christianity, and their application to human life and conduct.

*Homiletics* — The composition and delivery of sermons, with practical exercises; Private criticism and preaching before the class.

*Pastoral theology* — Lectures.

## Optional studies

### THE LANGUAGES COGNATE WITH HEBREW

1 — *Biblical Aramaic* — A class, open to all students of the requisite qualifications, will be formed in the second term, and will study the grammar with selections from the Aramaic of the Bible.

2 — *Syriac and Arabic* — Those who have already studied Hebrew and Biblical Aramaic may unite with the Syriac and Arabic classes, which are organized in alternate years, so that in regular order the three classes may pursue Biblical Aramaic, Syriac and Arabic. The Syriac class studies Syriac grammar, and reads selections from the Peshitto version in the first term, and reads selections from Bar-Hebraeus and Ephraem Syrus in the second term. The Arabic class studies the Arabic grammar, and reads selections from the version of Saadia in the first term, and from the Koran, in connection with a more particular study of Arabic syntax, in the second term.

3 — *Assyrian* — There are two Assyrian classes, composed of those who have already studied Hebrew, and two of the cognates. The one studies the Assyrian characters and grammar, and reads selections from the historical inscriptions during the second term. The second class consists of those who have already passed through the first class. They read selections from the historical and mythological inscriptions and the syllabaries. Lectures are also given on Babylonian and Assyrian literature, and on the history of the Assyrian language and the cuneiform signs. This course is extended through both terms.

4 — *The Shemitic courses* of Columbia College also are open to students of the seminary who are recommended by the faculty.

### CLASSES FOR ORIGINAL RESEARCH

These courses are open to a limited number of students of high standing from the senior and graduate classes.

1 — *Seminar in Biblical theology* — Professor Briggs conducts a seminar in Biblical ethics once a week during the year.

2 — *Seminar in Old Testament exegesis* — Professor Brown conducts a seminar in the book of Amos once a week during the second term.

### SPECIAL UNIVERSITY COURSES

These courses, by the courtesy of the institutions offering them, are open to such students of the seminary as are recommended by the faculty. Recommendations are given only to students of

superior scholarship, and only on the condition that these special university courses shall not interfere with the regular work appointed by the seminary.

By terms of agreement between the seminary and the University of the City of New York, the university "will admit without fee to special lectures in the graduate division, and also, with the consent of the professor occupying the chair concerned, to other lectures in the Department of Arts and Science students of the seminary recommended by the faculty of the seminary."

According to an agreement with Columbia College, permission is granted to students duly recommended, "in such number as may be approved by the president of the college," "to attend the lectures delivered in the School of Political Science on political economy and sociology, and the lectures in the School of Arts on the Semitic languages, philosophy and ethics, without the payment of fees."

SYNOPSIS

Hours per week	JUNIOR CLASS	Hours per week	MIDDLE CLASS	Hours per week	SENIOR CLASS
FIRST TERM					
1	Propædæutics	2	Exegesis, Hebrew poetry	2	Exegesis
5	Philology, Hebrew grammar	3	Exegesis, Gospel of John	3	Biblical theology
2	Philology, Hebrew translation	2	Biblical theology	2	Modern Christianity
1	Philology, Hebrew text	2	Ancient Christianity	3	Dogmatics
2	Philology, New Testament Greek	3	Dogmatics	1	Homiletics
5	Exegesis, Old Testament	2	Apologetics	1	Pastoral theology
2	Exegesis, Matthew and Mark	1	Homiletics	2	Catechetics
2	Biblical theology	1	Vocal culture		Vocal culture
2	Mission work				
SECOND TERM					
1	Philology	2	Exegesis, Hebrew poetry	2	Exegesis
1	Philology, New Testament Greek	3	Exegesis, Pauline epistles	3	Biblical theology
2	Exegesis, Pentateuch	2	Biblical theology	2	Symbolics
2	Exegesis, historical books	2	Medieval Christianity	3	Dogmatics
2	Exegesis, Hebrew text	3	Dogmatics	2	Christian ethics
1	Exegesis, introduction New Testament	2	Homiletics	1	Homiletics
1	Exegesis, Luke		Vocal culture	1	Pastoral theology
2	Biblical theology				
2	Apostolical Christianity				
1	Church polity				
1	Vocal culture				



## BUILDINGS

Main building, brick and stone, built 1882-4. Church or chapel, brick and stone, built 1882-4. Dormitory, five story brick and stone, built 1882-4. Class room building, two story brick and stone, built 1882-4. Library, built 1882-4. Gymnasium, built 1882-4.

## ADDITIONAL INFORMATION

Basis or terms of voluntary agreement between University of the City of New York and Union Theological Seminary of the City of New York :

1 — The university will confer the degree of bachelor of divinity on such students of the seminary at the time of graduation as shall be recommended therefor by the directors and faculty of the seminary ; the diploma to be paid for according to the university rules.

2 — The university will, on like recommendation concurred in by the committee on degrees of the council of the university, confer the degree of doctor of divinity on the alumni of the seminary.

3 — The university will admit to its library and reading room, under rules to be made for such cases, the students of the seminary.

4 — The university will admit without fee to special lectures in the graduate division, and also, with the consent of the professor occupying the chair concerned, to other lectures in the department of arts and science students of the seminary recommended by the seminary faculty.

5 — The seminary will admit to the privileges of its library for reference, under rules to be made for such cases, students of the university in the graduate classes or in the undergraduate senior class.

6 — The seminary will admit to its courses of special lectures, on any of its foundations, such students of the university as may be recommended by the university faculty, and will also admit any graduate university student recommended by the faculty of the university, to any optional class in Arabic, Assyrian, or any other subject, on the professor in charge of such subject finding him qualified for such class.

7 — The above six articles of agreement between the two foundations, or the substance thereof, shall be published by each in its annual catalogue.



## ROCHESTER THEOLOGICAL SEMINARY

*Rochester*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month      Year

15 Ap 1854 Legislature incorporated New York Baptist Union  
for ministerial education, which has under its  
special care the Rochester Theological Seminary.

## TRUSTEES

Elected

1888	President, Eric L. Hedstrom . . . . .	Buffalo
1889	Vice-President, Alanson J. Fox . . . . .	Detroit, Mich.
1888	Treasurer, Cyrus F. Paine . . . . .	Rochester
1889	Recording Secretary, Austin H. Cole . .	"
	Corresponding Secretary, Rev. Samuel P. Merrill . . . . .	"
1888	Rev. Cephas B. Crane, D. D. . . . .	Concord, N. H.
1888	Henry A. DeLand . . . . .	Fairport
1888	Rev. Robert S. McArthur, D. D. . . . .	New York
1888	James D. Reid . . . . .	"
1888	George L. Stedman . . . . .	Albany
1888	Frederick W. Taylor . . . . .	Buffalo
1888	Andrew J. Townson . . . . .	Rochester
1888	Zenas F. Westervelt . . . . .	"
1888	Daniel A. Woodbury . . . . .	"
1889	Rev. Frederick L. Anderson . . . . .	"
1889	Rev. T. Edwin Brown, D. D. . . . .	Philadelphia
1889	Joseph Campbell . . . . .	North Orange, N. J.
1889 <sup>*</sup>	Marvin A. Culver . . . . .	Rochester
1889	Rev. John H. Griffith, D. D. . . . .	Buffalo
1889	Daniel Harris . . . . .	Rochester
1889 <sup>†</sup>	Byron <sup>‡</sup> E. Huntley . . . . .	Batavia
1889	Rev. Henry M. King, D. D. . . . .	Albany
1889	John B. Trevor . . . . .	Yonkers
1890	Ezra R. Andrews . . . . .	Rochester
1890	Rev. Charles J. Baldwin . . . . .	Granville, O.
1890	Marsenus H. Briggs . . . . .	Rochester
1890	Ten Eyck Depuy . . . . .	"

## Elected

1890	Rev. Samuel W. Duncan, D. D . . . . .	Haverhill, Mass.
1890	Rev. Joseph F. Elder, D. D . . . . .	Albany
1890	James M. Hoyt . . . . .	Cleveland, O.
1890	Charles Siedler . . . . .	Jersey City
1890	Rev. J. W. A. Stewart . . . . .	Rochester
1890	Chauncey B. Woodworth . . . . .	"

## ADMINISTRATION

First year of service in Rochester Theological Seminary not reported.

President, Rev. Augustus H. Strong, 66 S. Clinton st.

Treasurer, Cyrus F. Paine

Librarian, Rev. Howard Osgood, 11 Livingston pl.

## INSTRUCTION

First year of service in Rochester Theological Seminary and years spent in teaching not reported.

Rev. Augustus H. Strong. President and Davies Professor of Biblical Theology, 66 S. Clinton st.

Rev. Howard Osgood. Hoyt Professor of the Hebrew Language and Literature, 11 Livingston pl.

William Arnold Stevens. Trevor Professor of Biblical Literature and New Testament Exegesis, 259 Alexander st.

Rev. T. Harwood Pattison. Wyckoff Professor of Homiletics and Pastoral Theology, 4 Portsmouth terrace.

Rev. Benjamin O. True. Pettengill Professor of Church History, 7 Portsmouth terrace.

Rev. Henry C. Robins. Professor of Christian Ethics, 580 West av.

Rev. Adelbert S. Coats. Pratt Professor of Elocution and Sacred Oratory, 27 Tracy park.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

The seminary is open to students of all denominations of Christians.

The course of instruction is intended primarily to meet the needs of college graduates; non-graduates, however, qualified to prosecute the course successfully, are admitted.

Candidates for admission must present certificates of membership in some Christian church, and letters from their respective churches, either licensing them to preach, or approving of their studying for the ministry, according to the usage of the denomination to which they belong. Upon presenting such testimonials, they will be examined in relation to their Christian experience, call to the ministry, and, if not graduates, their proficiency in the studies required for admission.

Graduates of colleges who seek admission to the seminary must bring letters from the presidents of the colleges from which they have been graduated, commending them as fit persons to study for the ministry; in the case of non-graduates, letters of a similar character must be brought, either from the principals of the institutions where they have studied, or from ministers of the gospel of known standing and reputation, and some evidence must be given of proficiency in English composition.

Students honorably dismissed from other theological institutions will be admitted to the same standing which they have had in those institutions.

## COURSES OF STUDY

### *Junior year — First term*

*Old Testament* — Hebrew grammar; Introduction to the Old Testament.

*New Testament* — Grammar of New Testament Greek; Critical exegesis of the Greek text, accompanied with discussion of the elementary principles of interpretation; New Testament introduction — lectures treating of the origin of the Gospels, history of the written New Testament, history of the printed New Testament, criticism of the text, etc.; Outline of the life of Christ, embracing an examination of the entire contents of the four Gospels, with discussion of such leading points in the history of the New Testament period, in the geography of Palestine and topography of Jerusalem, as are related to the life of Christ; Essays by members of the class on topics relating to the work of the term.

*Theology* — Lectures upon the aim and plan of a theological course in general, and of systematic theology in particular; Study of text-book, furnished by the professor on the prolegomena to Christian theology, embracing a discussion of its idea, material

and method, together with extemporaneous exposition and illustration; Doctrine of the existence of God, embracing a consideration of the origin of our idea of God's existence, of the proofs or corroborative evidences of God's existence, and of the erroneous explanations of the facts, viz: materialism, materialistic idealism, and pantheism.

*Homiletics* — Lectures — (1) Sacred eloquence, (First series) The speaker, personal characteristics; (Second series) The discourse, principles of sacred rhetoric; Class exercises in the analysis of sermons by great preachers; Lectures — (2) The use of the Bible for homiletical purposes; Essays by members of the class; Class exercise in the use of the Bible for homiletical purposes.

*Junior year — Second term*

*Old Testament* — Translation of portions of the Pentateuch; Introduction to the Pentateuch; Geography and ethnography of Palestine and the surrounding countries.

*New Testament* — Exegesis of the Greek text continued; New Testament introduction, continued; Life of Christ, continued, followed by studies in the Acts of the apostles; Two hours each week, as in the previous term, are given to the study of the English New Testament.

*Homiletics* — Lectures — (3) The history of preaching; (4) Missionary history; Essays on Bunyan's Pilgrim's progress, prepared by members of the class, and submitted for class criticism; Practice in extemporaneous speaking.

*Elocution* — Instruction in voice-culture; Lectures on philosophical principles underlying the arts of reading and speaking, with illustrations from the Scriptures and practice by the class; Private criticism and instruction.

*Middle year — First term*

*Old Testament* — Translation of selected portions; Introduction to the prophetic books.

*Church history* — Introduction to church history; History of Christianity during the first three centuries: — Spread and limitations; Life, worship and literature; Constitution and government of the Apostolic churches; Perversions of polity; Heresies and doctrine; Abstracts of special reading, and reports on topics assigned to members of the class.



*Theology* — The Scriptures a revelation from God, including the doctrine of miracles and inspiration; Attributes of God; Doctrine of the Trinity; Essays by members of the class.

*Homiletics* — Lectures; Composition of the sermon; The text; The theme; Parts of the sermon; Practice in the preparation of plans; Preaching with notes, in the chapel, with criticism by the class.

*Elocution* — Class practice in reading the Bible and standard English authors; Lectures on the philosophy of gesture; Recitation of masterpieces of English composition, under criticism of the class.

*Middle year — Second term*

*New Testament* — Critical exegesis of the Greek text, principally in the Acts and the Pauline epistles; Lectures on New Testament introduction, continued; Historical outline; The Apostolic church and the life of Paul; Exegesis of selected portions of the English New Testament.

*Church history* — Union of church and state; Creeds, councils and doctrinal controversies of the east, Augustinianism and Pelagianism; Monachism; Hierarchical development till the death of Gregory the Great; Corruption of life and worship; Protests against errors of life, polity and doctrine; Alliance of the papacy with the Franks; Rise of the temporal power; Assertion of papal claims by Hildebrand and Innocent 3; Conflict between the papacy and the civil rulers; The crusades; Mediæval life and worship, monasticism, philosophy and theology; Evangelical protests; Essays by members of the class.

*Theology* — The decrees of God; Execution of the decrees in creation, preservation and providence, including the doctrine of angels; Anthropology begun; Man a creation of God; Unity of the race; Essential elements of human nature; Origin of the soul; Original state of man; Law of God, as introductory to the doctrine of sin; Essays by members of the class.

*Homiletics* — Lectures — (1) The composition of the sermon (concluded); Rhetorical elements in the sermon.

(2) The delivery of the sermon; Various methods described and discussed; Preaching without notes, in the chapel, with criticism by the class; Essays by the class, subject, Missions.

*Senior year — First term*

*New Testament* — Lectures on the New Testament canon; Lectures on the principles of New Testament interpretation; Epistle to the Romans.

*Church history* — Decline of the Papal power; Councils of the 15th century; The revival of learning; German mysticism; Reformers before the reformation; Condition of the papacy, and view of the state of Europe at the beginning of the 16th century; Nature, progress and results of the Lutheran, Zwinglian, Calvinistic, English and Anabaptist reformations; Doctrinal variations; Essays by members of the class.

*Theology* — Anthropology, or the doctrine of man, continued; including the nature of sin, its universality, origin, imputation and consequences; Soteriology begun; Christology including the person of Christ and the two states of Christ, with special consideration of the atonement; Application of redemption by the Holy Spirit; Doctrine of election and calling; Essays by members of the class.

*Homiletics* — Lectures on public worship; Preaching without notes, in the chapel, before the faculty and students.

*Elocution* — Class practice in reading the Bible and printed sermons, under class-criticism.

*Senior year — Second term*

*Old Testament* — Lectures on its history, doctrines, and interpretation.

*Church history* — The Roman catholic reaction; The Jesuits, the inquisition, and the council of Trent; Protestantism; Divisions and conflicts with Romanism; Modern denominations: The Church of England; Presbyterianism; Rise of methodism; Congregationalists; Baptists; Essays by members of the class.

*Theology* — The application of redemption, through the work of the Holy Spirit, including union with Christ, regeneration, conversion (repentance and faith), justification, sanctification and perseverance; Doctrine of the church, including church polity and ordinances; Doctrine of final things, including physical death, the intermediate state, the second coming of Christ, the resurrection, the last judgment and the final states of the righteous and of the wicked; Doctrinal sermons by members of the class.

*Pastoral theology* — Lectures on pastoral duties ; Preaching without notes, in the chapel, before the faculty and students.

*Elocution* — Lectures on pulpit oratory ; Lectures on the reading of hymns, and practice by the class, under class-criticism.

REQUIREMENTS FOR GRADUATION

Written examinations are held at the close of each term, and oral examinations at the close of the year. The latter are held in the presence of the committee of examinations, which is appointed by the executive board. Only those students are enrolled as graduates who have satisfactorily passed all the examinations of the course.

BUILDINGS

(Facts not reported.)

GERMAN MARTIN LUTHER COLLEGE

*Buffalo*

HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
26 Ag	1853	Incorporated under general law. Certificate filed in office of Secretary of State.

TRUSTEES

Elected		
1886	Chairman, Rev. Martin Burk	180 Goodel st.
1889	Treasurer, John Schaumloeffel	778 Michigan st.
	<sup>1</sup> Secretary, William Grabau	154 Maple st.
1886	Rev. John A. Grabau	Bergholz
1887	William Gerlach	2 Elm st.
1887	Charles Goers	Bergholz
1888	William Bertz	769 Michigan st.
1888	Gregor Schroeer	85 Howard av.

HONORARY MEMBERS

Rev. John Kinderman	Detroit, Mich.
Augustus Ziemer	Cedarburg, Wis.

1 Not a trustee

## ADMINISTRATION

Figures in column at left give first year of service in German Martin Luther College.

1886 Dean, William Grabau, 154 Maple st.

1889 Treasurer, John Schaumloeffel, 778 Michigan st.

## INSTRUCTION

Figures in column at left give first year of service in German Martin Luther College and years spent in teaching.

1886 William Grabau. Dean and Professor of Theology and  
5 Instructor in Latin, Greek and Hebrew Languages,  
154 Maple st.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships, requirements for admission or courses of study reported.

## BUILDINGS

Main building three story and basement brick, total floor area 12,000 sq. ft., one class room, 20 seats, value \$8,000. Two dormitories, music room, library, six president's rooms, reception room, three students' and three housekeepers' rooms, dining room, laundry and kitchen in main building.

## ST LAWRENCE UNIVERSITY

## CANTON THEOLOGICAL SCHOOL

*Canton*

For historic sketch and trustees see St Lawrence University, pp. 899-900.

## ADMINISTRATION

Figures in column at left give first year of service in Canton Theological School.

1879 President, Rev. Isaac Morgan Atwood, D. D.

Treasurer, George Robinson.

1880 Secretary, Rev. Henry Prentiss Forbes, M. A., D. D.

Educated at St Lawrence University and University of Leipzig.



## INSTRUCTION

Figures in column at left give first year of service in Canton Theological School and years spent in teaching.

1879 Rev. Isaac Morgan Atwood, D. D. President and Dock-  
15 stader Professor of Theology and Ethics.

1869 Rev. John Stebbins Lee, D. D. Professor of Ecclesiastical  
45 History and Archeology.

Educated at Amherst.

1880 Rev. Henry Prentiss Forbes, M. A., D. D. Craig Professor  
10 of Biblical Languages and Literature.

See also "Administration."

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

*First year — First term*

*Rhetoric* — Hart's Manual; A. S. Hill's Principles; Exercises.

*Logic* — Jevons's Lessons, with lectures.

*Greek* — Harper's New Testament method.

*Hebrew* — H. G. Mitchell's Elementary grammar and exercises, or Harper's lessons.

*Biblical geography and antiquities* — Hurlbut's Manual and lectures.

*Second term*

*Rhetoric* — Art of composition; Art of discourse; Themes.

*Ethics* — Hopkins' The law of love and love as law, with lectures.

*Archeology* — Lectures.

*Ecclesiastical history* — Fisher, with Schaff as reference.

*Greek* — New Testament syntax; Gospel of John; New Testament text and manuscripts.

*Hebrew* — Mitchell's Elementary grammar and exercises.

*Second year — First term*

*Rhetoric* — Study of style ; Critical exercises, lectures.

*Sacred rhetoric* — Homiletics, Phelps's Theory of preaching.

*Ecclesiastical history* — Fisher's Reformation.

*Greek Testament* — Selections from the Gospels with Green's Grammar.

*Pastoral theology* — Lectures on the care and administration of the church.

*Hebrew* — Gesenius's Grammar and exercises.

*Second term*

*Psychology* — Hopkins's Outline study of man ; Sully ; Lectures.

*History of doctrines* — Fisher, with lectures, Ballou's Ancient history of universalism and Beecher's History of retribution.

*Exegesis* — Critical study of the Greek of the New Testament and interpretation.

*Greek* — Pauline epistles ; Hermeneutics — Immer.

*Hebrew* — Selections from the Old Testament.

*Third year — First term*

*Rhetoric* — Instruction in the art of expression and communication ; Homiletics ; Study and criticism of sermons.

*Theology* — The latest word of universalism, with lectures.

*Evidences* — Wright's Logic of the Christian evidences.

*Comparative theology* — Clarke's Ten great religions, with lectures.

*Greek Testament* — Critical readings and exposition.

*Old Testament* — Origin of books, History of canon, prophecy.

*Second term*

*Emotional religion and the inner life* — Clarke's Doctrine of prayer.

*Old Testament theology* — Oehler.

*Evidences* — Norton's Genuineness ; Huidekoper's Indirect testimony ; Wright's Logic, part three.

*New Testament* — Dod's Introduction ; History of text of Canon.

*Theology* — Lectures on systematic theology.

*Hebrew* — Readings from the Psalms and the Prophets.

*Old Testament history* — McLear.

*Fourth year*

*Hebrew*—Critical study of the Pentateuch.

*Exegesis*—Critical reading of the New Testament.

*Christianity in its relation to science*—Hill's Natural sources of theology ; Natural law in the spiritual world.

*Theology of the New Testament*—Reuss or Weiss, with lectures.

*Life of Christ*—Geikie and Farrar ; Theological encyclopedia.

*Preaching*—Composition and criticism of sermons.

*Ecclesiastical history*—Sharpe's History of the Jews and their literature ; Uhlhorn's Christianity and paganism.

## REQUIREMENTS FOR GRADUATION

Those only are considered graduates of the school and entitled to its diploma, who have completed the three years' course of study ; a fourth year of study is added for those wishing to pursue it, at the close of which the degree of bachelor of divinity is conferred.

## BUILDINGS

Fisher Hall, two story stone, built 1882, floor area 5,000 sq. ft., five class rooms, 200 seats. Chapel, 300 seats. President's house, two story brick, built 1887, floor area 3,744 sq. ft., value \$5,000. Library equally shared with the college of arts and science of St Lawrence University.

## ADDITIONAL INFORMATION

The Canton Theological School is an independent department of St Lawrence University. It occupies the grounds and in part the buildings with the collegiate department. Its funds, faculty and administration are distinct. The trustees are in common. Fisher Hall is the exclusive property of the theological school.

After the close of the fiscal year, the treasurer received over \$17,000 from the executors of the late William Henry Ryder, D. D. of Chicago, in addition to \$15,000 already received from the same source, for the further endowment of the school.

## ALFRED UNIVERSITY

### THEOLOGICAL DEPARTMENT

Historic sketch, trustees, administration, honorary degrees, etc., all included under Alfred University, Collegiate Department, pp. 910-913.

### REQUIREMENTS FOR ADMISSION

Any who desire the advantages of theological study are received into the classes on such terms as the faculty may prescribe.

### COURSES OF STUDY

No definite course of study reported.

### REQUIREMENTS FOR GRADUATION

The degree of bachelor of divinity is conferred on college graduates who complete the course.

### BUILDINGS

See Alfred University, Collegiate Department, p. 920.

## CHRISTIAN BIBLICAL INSTITUTE

*Stanfordville*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

- | Month | Year |   |
|-------|------|---|
| 15 O  | 1866 | Trustees elected at Marshall, Michigan, for the purpose of founding a school under the direction of the Christian denomination. |
| 16 Ap | 1868 | Legislature incorporated the Christian Biblical Institute at Eddytown, Yates county.  |
| My    | "    | Meeting of trustees held at Eddytown.   |
| 6 O   | 1869 | School opened at Starkey Seminary.  |
|       | 1872 | School removed to Stanfordville, Dutchess county.   |



## TRUSTEES

President, Rev. Isaac H. Coe <sup>1</sup> .....	New Bedford, Mass.
Secretary, Rev. Martyn Summerbell, D. D., Ph. D.....	Lewiston, Me.
Benjamin J. Hall.....	Willow Brook
Elwood C. Harris.....	Newark, N. J.
Mrs Ann R. Jarvis.....	Kinderhook
Rev. T. M. McWhitney, D. D.....	Marion, Ind.
Rev. David E. Millard.....	Portland, Mich.
Francis A. Palmer.....	Broadway Bank, N. Y
Rev. J. Rodenbaugh.....	Locktown, N. J.
Rev. E. R. Wade.....	McLean
Rev. C. H. Hainer.....	New Market, Ont.
Rev. W. Hathaway, D. D.....	Washingtonville
Rev. Lester Howard.....	Swansea, Mass.
Rev. James Maple, D. D.....	Troy, O.
Rev. John T. Phillips.....	Graysville, Ind.
Rev. D. I. Putnam.....	South Westerlo
Rev. Henry Y. Rush.....	West Milton, O.
Rev. C. A. Tillinghast.....	Providence, R. I.
Rev. John B. Weston, D. D.....	Stanfordville

## APPOINTED DURING YEAR

George A. Chace.....	Fall River, Mass.
W. F. Corwith.....	Brooklyn
<sup>1</sup> Pres. D. A. Long, D. D., LL. D.....	Yellow Springs, O.
<sup>1</sup> Rev. Daniel W. Moore.....	Orangeport
<sup>1</sup> Stephen H. Powers.....	New York
<sup>1</sup> Rev. Charles P. Smith.....	Pawtucket, R. I.
<sup>1</sup> Rev. Myron Tyler.....	Erie, Pa.
<sup>1</sup> Rev. Orin J. Wait, M. A.....	Fall River, Mass.

## VACANCIES

Hon. David Clark, Hartford, Ct., died 8 O 1889

Alex. Carmichael, Westerly, R. I., term expired 1 My 1890

## ADMINISTRATION

Figures in column at left give first year of service in Christian Biblical Institute.

1882 President, Rev. John B. Weston, D. D.

B. A. Antioch College 1857, M. A. 1860; D. D. Union Christian College, Antioch College 1884; Principal preparatory department, Antioch College 1857-62, Acting president 1862-64, Professor of Greek, 1865-81; Member American Philological Association; Author Horace Mann, a view of his life and its meaning, Principles or principal, which?; Associate editor Herald of gospel liberty.

1878 Treasurer and Librarian, Rev. Alva H. Morrill.

B. A. Dartmouth 1872, M. A. 1875; Principal Proctor Academy, Andover, N. H. 1875-8.

## INSTRUCTION

Figures in column at left give first year of service in Christian Biblical Institute and years spent in teaching.

1882 Rev. John B. Weston, D. D. President and Professor of  
34 Biblical Literature and Theology.

See also "Administration."

1878 Rev. Alva H. Morrill, M. A. Professor of Greek, English  
16 Literature and Church Music.

See also "Administration."

1872 Rev. Warren Hathaway, D. D. Professor of Homiletics,  
19 Blooming Grove.

D. D. Union Christian college; Author Life of Rev. John Ross, Living questions — studies in nature and grace.

1874 Rev. Martyn Summerbell, D. D., Ph. D. Professor of Pas-  
20 toral Theology, Lewiston, Me.

B. A. College of the City of New York 1871, M. A. 1874; D. D. Union Christian College 1889; Ph. D. University of the City of New York 1889; Vice-principal and professor of classics and physics, Friends Seminary 1872-80; Author Special services, or ministers' hand-book; Member American Association of Christian Philosophers, Society of Comparative Religion.

## VACANCIES

Robert J. Wright, LL. D. Professor of metaphysics and ethics.  
Died.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

## COURSES OF STUDY

The study of Biblical literature and interpretation consists of lectures by the president.

In the study of sacred history text-books are used, supplemented by lectures by the president.

The course in theology consists of two recitations a week with the president. Text-books are used, and lectures are given by the president. The object of this course is to pursue the study historically and didactically, to form our convictions on the teachings of the Bible and an intelligent use of our own reason.

Recitations in logic, intellectual philosophy and ethical studies are held twice each week with the president. Text-books are used, supplemented by lectures.

The aim of the Greek course is to enable the student to read the Greek Testament easily and critically. The amount of time required to be devoted to this study will depend on one's preparation before coming and his proficiency in it while here.

Instruction in vocal music and elocution is also given by the professor of those subjects. Those who need instruction and drill in these branches have opportunity for it.

The study of Hebrew is optional, but classes are formed under the instruction of the president whenever there is sufficient demand.

These courses of study are so arranged that each year can be taken by itself. The necessities of the school are such that classes have to be combined. Students entering at the beginning of any year take the studies which for that year are pursued in the school; but, by remaining three years, have opportunity to take all the studies of the curriculum.

Persons who can not take a full course are received as partial students, and may avail themselves of the benefit of the lectures and other exercises for which they are prepared, free of charge.

During the entire course instruction is given and exercises required in the use of the English language, the composition and

delivery of sermons, and in other subjects of practical bearing on the work of the ministry. This work is under the direction of the president and resident teachers.

Lectures on pastoral theology and homiletics are delivered at some time during each year by the non-resident professors to whom those subjects pertain.

### SYNOPSIS OF STUDIES

#### *First year*

Biblical literature and interpretation — History of the canon of the Scriptures of the Old and New Testament; Exegetical study of the Pentateuch and of the book of Matthew

Sacred history — History of the Jews to the Christian era

Theology — Natural theology

Logic — Deductive and inductive

Greek — Preparatory

#### *Second year*

Biblical literature and interpretation — *Old Testament* — Historical writings and prophecies to the time of the captivity. *New Testament* — The Gospels concluded; Acts to the missionary journeys of Paul

Sacred history — History of Christianity for the first four centuries

Theology — The attributes and moral government of God

Intellectual philosophy

Greek — New Testament

#### *Third year*

Biblical literature and interpretation — *Old Testament* — History and prophecies of the captivity; Messianic prophecies and psalms. *New Testament* — Life and Epistles of Paul, and other epistles

Sacred history — Medieval and modern ecclesiastical history

Theology — The work and teaching of Jesus; Nature, duty, and destiny of man

Moral and social science

Greek — New Testament

Hebrew — Optional



Full diplomas are granted to students who do satisfactory work and pass satisfactory examinations in the complete course of study. For this a specified amount of Hebrew will be required as well as ability to read the entire New Testament in the original Greek.

Main building, two story wood, built 1874, floor area 1,408 sq. ft., two class rooms, 60 seats, value \$22,000. Dormitory, two story wood, built 1872, value \$4,000. President's house, two story wood, built 186-, floor area 3,670 sq. ft., value \$8,000. Library and chapel are in the main building.

CONSISTING OF

College of Liberal Arts

For list of date abbreviations see p. 254.

29 Mr 1881 Legislature incorporated Chautauqua School of  
Theology.

30 Mr 1883 Legislature incorporated Chautauqua University.

President, Lewis Miller .....	Akron, O.
Treasurer, E. A. Skinner .....	Westfield
Secretary, W. A. Duncan .....	Syracuse
John Brown .....	Chicago
F. D. Carley .....	Tuxedo
William M. Clark .....	Liberty, Ind.
W. T. Dunn .....	Allegheny, Pa.
E. G. Dusenbury .....	Portville
J. T. Edwards .....	Randolph
C. D. Firestone .....	Columbus, O.
J. C. Gifford .....	Westfield

E. M. Hukill.....	Pittsburgh, Pa.
H. A. Massey.....	Toronto, Ont.
Robert A. Miller.....	Canton, O.
H. H. Moore.....	St Petersburg, Pa.
Edgar Ocumpaugh.....	Rochester
Francis H. Root.....	Buffalo
N. I. Rubinkam.....	Jamestown
W. H. Short.....	Youngsville, Pa.
Jesse Smith.....	Titusville, Pa.
C. Studebaker.....	South Bend, Ind.
William Thomas.....	Meadville, Pa.
John H. Vincent.....	Buffalo
W. G. Williams.....	Columbus, O.

## SCHOOL OF THEOLOGY<sup>1</sup>

For historic sketch and trustees see foregoing.

## ADMINISTRATION

First year of service in Chautauqua not reported.

Chancellor of the University, John H. Vincent, Buffalo.

Dean and Registrar, Rev. Alfred A. Wright, Cambridge, Mass.

Treasurer, E. A. Skinner, Westfield.

## INSTRUCTION

First year of service in Chautauqua and years spent in teaching not reported.

William R. Harper, Ph. D. Professor of Hebrew, New Haven.

Rev. Alfred A. Wright, D. D. Dean and Professor of Greek and Doctrinal Theology, Cambridge, Mass.

Philip Schaff, D. D. Professor of Historical Theology, New York.

Luther T. Townsend, D. D. Professor of Practical Theology and Christian Science, Boston.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

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<sup>1</sup> No fixed location; address the dean.

## COURSES OF STUDY

### HEBREW AND THE OLD TESTAMENT

In this department four courses are offered; elementary, intermediate, progressive and advanced. Each course consists of 40 lessons.

### GREEK AND THE NEW TESTAMENT

In this department three courses are offered; preparatory, advanced and exegetical. The first course consists of 12 lessons, the second and third each of 40 lessons.

### HOMILETICS AND PASTORAL THEOLOGY

In this department the theory of elocution and course of study is outlined by R. L. Cumnock, M. A.; in addition to this, students are required to take at their own expense a course of practical instruction from a local professor who is approved by the dean; they are also recommended to attend the summer session of the Chautauqua School of Oratory, which is under the personal supervision of Professor Cumnock.

Courses are also offered in Biblical and doctrinal theology, ecclesiastical history, Christian science, life and literature. The course in each of these departments is under the general direction of the dean.

### Post-graduate courses

Clergymen desirous of pursuing post-graduate courses of study in Hebrew or in Greek may now do so under the general direction of the dean. In order to be admitted to this department students must pass its regular examination.

## REQUIREMENTS FOR GRADUATION

Full and rigid written examinations are required in the presence of competent committees, and under the general direction of the dean. If satisfactory, they will entitle students to the degree of bachelor of divinity.

## BUILDINGS

(Facts not reported.)

## ADDITIONAL INFORMATION

The Chautauqua School of Theology is a non-resident institution for the benefit of those who are not able regularly to pursue a course of theological study; it is an unsectarian and evangelical

institution and carries on most of its instruction by means of the correspondence plan.

No honorary degrees are conferred. The degree of B. D. has been conferred on eight men during the existence of the school. The examinations are personally supervised by an appointed examiner, and his affidavit sent to the central office. Only such examinations have been permitted to count for a degree. The diplomas are signed by the faculty as well as officers of the school. These diplomas are held by

Rev. Walter Reid, Weston, Ont.

Rev. Joseph Philp

Rev. R. C. Armstrong, Fort Worth, Tex.

Rev. William Hansom, Chicago, Ill.

Rev. Alfred Roebuck, Bradford, Eng.

Rev. J. W. Presby, Portland, Ct.

Rev. J. C. Hull, Minneapolis, Minn.

Rev. C. H. Haggard, Townsville, Queensland, Australia.

All statistics are here given, because not complete enough to be included in table 3.

#### CLASSIFICATION OF STUDENTS

##### *By courses*

<sup>1</sup> Hebrew .....	0	Practical theology.....	6
Greek .....	119	Historical theology.....	1
Doctrinal theology.....	17	Christian science .....	4

##### *By states*

New York .....	9	Virginia .....	3
Maine .....	3	North Carolina.....	1
New Hampshire.....	1	South Carolina.....	1
Vermont.....	2	Georgia .....	4
Massachusetts .....	3	Texas .....	3
Rhode Island .....	2	Arkansas .....	1
Connecticut .....	1	Kentucky .....	2
Pennsylvania .....	4	Ohio .....	16
New Jersey .....	5	Indiana .....	1
Delaware .....	1	Illinois.....	9
Maryland .....	4	Michigan.....	7
West Virginia .....	2	Wisconsin .....	1

<sup>1</sup> Hebrew instruction is given through the American Institute of Sacred Literature whose certificates are accepted by this school.



Minnesota .....	6	Utah .....	1
Iowa .....	2	California .....	1
Missouri .....	7	Washington .....	1
Kansas .....	7	British America .....	17
Nebraska .....	4	Europe .....	1
Colorado .....	2		

## FINANCES

The instructors are paid the tuition fees in full, and the dean does the office work without additional charge.

## NIAGARA UNIVERSITY

### SEMINARY OF OUR LADY OF ANGELS

*Suspension Bridge*

For historic sketch and trustees see Niagara University, pp. 782-783.

## ADMINISTRATION

Figures in column at left give first year of service in Niagara University.

1865 President, Very Rev. P. V. Kavanagh, C. M.

See also Niagara University, Collegiate Department.

## INSTRUCTION

Figures in column at left give first year of service in Niagara University and years spent in teaching.

1865 Very Rev. P. V. Kavanagh, C. M. President and Professor  
30 of Geology and Zoology.

See also "Administration."

1881 Rev. E. A. Antill, C. M. Professor of Natural Philosophy  
15 and Chemistry.

See also Niagara University, Collegiate Department.

1884 Rev. J. A. Alizeri, C. M. Professor of Moral Theology,  
42 Canon Law, Exegesis, Hermeneutics, Spanish and Italian.

See also Niagara University, Collegiate Department.

1872 Rev. M. J. Kircher, C. M. Professor of Moral and Dog-  
20 matic Theology.

See also Niagara University, Collegiate Department.

1884 Rev. H. B. Menniges, C. M. Professor of Hebrew, Astron-  
17 omy and Gregorian Chant.

See also Niagara University, Collegiate Department.

1879 Rev. L. A. Grace, C. M. Professor of Church History,  
14 English Literature, Composition and Homiletics.

See also Niagara University, Collegiate Department.

1886 Rev. J. O. Hayden, C. M. Director, Professor of Mental  
15 Philosophy and Liturgy.

See also Niagara University, Collegiate Department.

Rev. M. Kirschel, B. A. Professor of German.

1888 E. Rengel, B. A. Professor of German.

2 See also Niagara University, Collegiate Department.

### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

### COURSES OF STUDY

#### FIRST YEAR

Mental philosophy — Logic and metaphysics — Sanseverino

English classics and composition — One oration

Biblical exegesis — Lectures

Ecclesiastical history — Alzog

Ceremonies — Baltimore ceremonial

Gregorian chant — Young's Roman hymnal

Chemistry — Nichol

Zoology — Nicholson

Natural philosophy — Norton

Hebrew — Mannheimer

German (optional) — Schleiniger, *Bildung des jungen Predigers*;  
Grammar

French, Spanish and Italian — Optional

#### SECOND YEAR

Mental philosophy (completed) — Sanseverino

Ethics, history of philosophy and critical examination of various  
systems.

English classics and composition — One oration

Biblical exegesis — Lectures

Ecclesiastical history — Alzog  
 Ceremonies — Baltimore ceremonial  
 Gregorian chant — Young's Roman hymnal  
 Astronomy — Lockyer  
 Geology — Nicholson  
 Hebrew — Mannheimer  
 Modern languages — Same as in first year

### THIRD, FOURTH AND FIFTH YEARS, AND HALF OF SIXTH YEAR

Dogmatic theology — Perrone  
 Moral theology — Konings  
 Ascetical theology — Scaramelli  
 Pastoral theology — Selections  
 Canon law — Devoti  
 Sacred hermeneutics — Janssen's hermeneutics  
 Biblical exegesis — Lectures  
 Sacred rhetoric — Fr. McNamara. All preach at least twice during the year.

Ecclesiastical history — Alzog  
 Ceremonies — Baltimore ceremonial  
 Gregorian chant — Young's Roman hymnal  
 German homiletics (optional) — Schleinigier  
 English classics — Lectures

### SIXTH YEAR FROM CHRISTMAS TO END OF TERM

In moral theology, De Matrimonio et de sexto — Konings  
 Ascetical theology — Scaramelli  
 Pastoral theology — Selections  
 Rubrics of the breviary, missal and ritual  
 Canon law — Devoti  
 Sacred hermeneutics — Janssen's  
 Biblical exegesis — Lectures  
 Church history — Alzog  
 Sacred rhetoric — Fr. McNamara. Sermons  
 Ceremonies — Baltimore ceremonial  
 Gregorian chant — Young's Roman hymnal  
 German homiletics (optional) — Schleinigier

### BUILDINGS

See Niagara University, Collegiate Department, p. 788.

# WAGNER MEMORIAL LUTHERAN COLLEGE

*Rochester*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
	1885	J. G. Wagner of Rochester purchased the building in which the school is located, and presented it to Zion's Lutheran Congregation of Rochester.
30 J1	1886	Wagner Memorial Lutheran College incorporated under general law, and certificate filed in Secretary of State's office.
	1889	Property transferred to the New York Ministerium of the Evangelical Lutheran church.

## TRUSTEES

President, Rev. A. Richter  
 Vice-President, J. G. Wagner  
 Treasurer, D. Bantleon  
 Rev. J. Brezing  
 Rev. G. H. Gomph  
 Rev. G. C. F. Haas  
 Rev. J. J. Heischmann  
 Rev. H. D. Kraeling  
 Rev. J. Loch  
 Hon. H. Martin  
 Rev. T. B. Roth

## APPOINTED DURING YEAR

Rev. J. A. Timm

## VACANCIES

Rev. J. Nicum, resigned, 16 Je 1890

## ADMINISTRATION

Figures in column at left give first year of service in Wagner Memorial.

1888 Director, Rev. J. S. Steinhæuser, 6 Oregon st.

Graduated from Evangelical Lutheran Seminary at Philadelphia 1875; Tutor, St Matthew's Academy 1871-2.

Treasurer, D. Bantleon, Corner River and N. Water sts.

Secretary, Carl F. W. Betz.



## INSTRUCTION

Figures in column at left give first year of service in Wagner Memorial and years spent in teaching.

1888 Rev. J. Steinhæuser. Director and Professor of Religion,  
3 Advanced German, New Testament Greek, Hebrew and  
Universal History, 6 Oregon st.

See also "Administration."

1889 Rev. Justus F. Holstein. Professor of Latin and Greek,  
3 5 Gorham st.

Graduated from Gymnasium at Meriden, Germany, and  
Lutheran Theological Seminary, Philadelphia.

1888 J. C. Hoch, M. A., Ph. D. Professor of Mathematics,  
6 English Branches and primary Latin, 10 Wilson st.

B. A. Franklin and Marshall College 1885, M. A. 1888; Ph. D.  
National University of Chicago 1889; Professor of mathe-  
matics, Witherspoon Institute 1885-6; Principal Harmony  
Normal School 1886-7; Principal Kane Academy 1887-8.

1889 Carl F. W. Betz. Professor of Religion, German and  
20 Natural Sciences, 17 Skuse park.

Teacher in public schools, Heisterberg, Prussia 1870-5; Teacher  
in private school, Herborn, Prussia 1875-86; Teacher, Zion  
school, Rochester 1888-9.

## VACANCIES

Eva Meyer. Removed by trustees.

## PROMOTIONS

In salary alone

Rev. J. Holstein

Professor J. Hoch

## HONORARY DEGREES

(None)

## COLLEGE APPOINTMENTS

Valedictory, Louis Happ.....	Port Jervis
Salutatory, Theophilus Luber.....	Blossom
First English oration, John Weigl.....	Rondout
Second English oration, Paul Weller.....	Rockville, Conn.
First German oration, Austin Roeder.....	Lisbon, Ont.
Second German oration, Carl Wanaerke.....	Morristown, Pa.
Third German oration, Paul Baehnisch.....	Rochester

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

(None)

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

Hours  
per week

## FIRST YEAR — SEXTA CLASS

- 4 Religion — Catechism, psalms, church hymns, Bible history, sacred geography
- 5 German — Grammar; orthography; dictation composition; declamation
- 5 Latin — Grammar, translations, oral and written exercises
- 2 Universal history
- 3 English — Reading; Spelling; Grammar
- 2 Geography
- 3 Arithmetic
- 2 Natural history (zoology)
- 1 Penmanship
- 1 Drawing

## SECOND YEAR — QUINTA CLASS

- 4. Religion — (Combined with the preceding class)
- 5 German — Grammar; Dictation exercises; Compositions; Elocution and declamations
- 5 Latin — Grammar, complete; Written exercises and translations
- 4. English — Grammar, to syntax; elocution
- 2 Universal history
- 2 Modern geography
- 3 Arithmetic — To longitude and time
- 2 Natural history
- 1 Penmanship
- 1 Drawing

## THIRD YEAR — QUARTA CLASS

- 4 Religion — Catechism; Church history
- 4 German — Grammar; Written exercises, reading; Elocution and declamation
- 5 Latin — Grammar; Latin reader, oral and written exercises

Hours  
per week

- 4 Greek — Grammar, to regular verb, oral and written exercises
- 3 English — Grammar, syntax finished, elocution
- 2 Universal history
- 2 Geography
- 3 Arithmetic — To ratio

#### FOURTH YEAR — TERTIA CLASS

- 4 Religion — (Combined with the preceding class)
- 4 German — Grammar, syntax finished ; Dictation and essays, declamations
- 5 Latin — Grammar finished ; Cæsar ; written exercises
- 5 Greek — Grammar, to irregular verb ; oral and written exercises ; Xenophon's Anabasis
- 3 English — Composition and rhetoric ; elocution
- 2 Universal history
- 2 U. S. history
- 2 Geography
- 3 Mathematics — Arithmetic, finished ; algebra, to simple equations

#### FIFTH YEAR — SECUNDA CLASS

- 4 Religion — Church history ; isagogics ; dogmatis and ethics ; Greek New Testament
- 4 German — Literature ; reading of classics ; essays, dictations, letters, orations
- 5 Latin — Written exercises ; Cicero ; Ovid ; Virgil
- 5 Greek — Syntax ; Xenophon's Anabasis ; written exercises
- 3 English — Composition and rhetoric ; English literature ; Civil government
- 2 Universal history
- 1 U. S. history — Finished
- 4 Mathematics — Algebra, simple equations, powers and roots ; geometry, plane and solid
- 1 Natural philosophy

#### SIXTH YEAR — PRIMA CLASS

- 4 Religion — (Combined with preceding class)
- 4 German — Literature, original orations and essays
- 5 Latin — Composition, Horace, Cicero ; written exercises, dictation and translation in class

Hours  
per week

- 5 Greek — Syntax, finished ; Plato, Demosthenes, Homer
- 1 Hebrew — Reading and writing
- 3 English — Composition and rhetoric ; English literature ;  
mental philosophy
- 4 Mathematics — Algebra, finished ; Trigonometry
- 1 Natural philosophy
- 1 Chemistry
- 2 Universal history

### REQUIREMENTS FOR GRADUATION

Examinations are held regularly at the close of each year, and if satisfactorily passed, admit the student to the next higher grade. Those who have completed the full course receive diplomas, testifying their fitness to enter the Theological Seminary at Philadelphia.

### BUILDINGS

Main building, three story brick, built 1852, floor area 13,824 sq. ft., five class rooms, 50 seats, value \$16,000.

### ADDITIONAL INFORMATION

Wagner College is a church school under the control of the German Lutheran church. Instruction is given mainly in the German language, but a number of hours each week are occupied in the study of English. The aim of the college is to educate young men for the ministry, and especially to afford preparation for the Theological Seminary at Philadelphia. The institution desires to furnish German churches with ministers who are familiar with both the German and English languages ; the course of study is modeled after that of the German gymnasia and covers six years. The school has no endowment and is dependent on the receipts from the students, together with the voluntary offerings of the congregations connected with the New York Ministerium.



# RENSSELAER POLYTECHNIC INSTITUTE

*Troy*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

- | Month | Year |  |
|-------|------|--|
|       | 1824 | Hon. Stephen Van Rensselaer founded school of theoretical and practical science at Troy.   |
| 21 Mr | 1826 | Legislature incorporated the Rensselaer School.  |
| 8 My  | 1837 | Trustees united with those of the Troy Academy ; the latter institution to be known as the department of classical literature of the Rensselaer Institute. The whole school made subject to the visitation of the regents. |
|       | 1849 | Institution reorganized on the basis of a polytechnic institute ; course of study materially enlarged.   |
| 8 Ap  | 1861 | Powers of the trustees enlarged ; name of the institution changed to the Rensselaer Polytechnic Institute.   |

## TRUSTEES

President, John Hudson Peck, LL. D.

Vice-President, Albert E. Powers

Treasurer, William H. Young

Secretary, William H. Doughty, C. E.

Mayor of Troy, ex-officio

Stephen W. Barker, M. E.

Henry B. Dauchy

Edward C. Gale, C. E.

Robert W. Hunt

Hon. Charles R. Ingalls

Rev. William Irvin, D. D.

William Kemp

James S. Knowlson, M. A.

Henry G. Ludlow

Charles Macdonald, C. E.

Elias P. Mann, C. E.

Joseph C. Platt, C. E.

John Squires, C. E.  
 Rev. J. Ireland Tucker, D. D.  
 Theodore Voorhees, C. E.  
 James P. Wallace, C. E.  
 Joseph M. Warren, M. A.  
 Horace G. Young, C. E.

APPOINTED DURING YEAR

Paul Cook

VACANCIES

J. W. Fuller, Troy, died 15 My 1889  
 H. C. Lookwood, Troy, died 6 F 1890

ADMINISTRATION

First year of service in Rensselaer Polytechnic not reported.

President, John Hudson Peck, LL. D.  
 Director, David Maxson Greene, 41 First st.  
 Treasurer, William H. Young  
 Secretary, William Pitt Mason, C. E., M. D. 156 First st.

INSTRUCTION

First year of service in Rensselaer Polytechnic and years spent in teaching not reported

John Hudson Peck, LL. D., President  
 David Maxson Greene, C. E. Director and Professor of  
 Geodesy, Road Engineering and Topographical Drawing,  
 41 First st.  
 James Hall, M. A., LL. D. Emeritus Professor of Theo-  
 retical, Practical and Mining Geology, Albany.

New York State Geologist.

Dascom Greene, C. E. Professor of Mathematics and  
 Astronomy, 113 Third st.  
 Henry B. Nason, Ph. D., M. D., LL. D. Professor of Chem-  
 istry and Natural Science, 10 Washington pl.  
 Dwinel French Thompson, B. S. Professor of Descriptive  
 Geometry, Stereotomy and Drawing, Lansingburgh.  
 Palmer Chamberlaine Ricketts, C. E. William Howard  
 Hart Professor of Rational and Technical Mechanics,  
 17 First st.

- William Pitt Mason, C. E., M. D. Professor of Analytic Chemistry, 156 First st.
- Richard Halsted Ward, M. A., M. D. Professor of Botany, 53 Fourth st.
- Charles Wellman Parks, C. E. Acting Professor of Physics, 1825 Fifth av.
- Jules Godeby, B. A. Instructor in the French Language and Literature, Clark house.
- Charles Winthrop Crockett, C. E., M. A. Assistant Professor of Mathematics and Astronomy, 95 Grand st.
- Hugh Anderson, C. E. Assistant in Rational and Technical Mechanics, Ranken house.
- Edward R. Cary, C. E. Assistant in Geodesy, 5 Cypress st.
- John H. Emigh, C. E. Assistant in Mathematics and Geodesy, 3349 Sixth av.
- John G. Murdoch, M. A. Instructor in the English Language, and Assistant in Mathematics, 2013 Fifth av.
- Edward Fenemore Chillman, C. E. Assistant in Descriptive Geometry and Drawing, 70 Grand st.
- Guy Bennett Waite, C. E. Assistant in Mathematics and Geodesy, 245 Eighth st.

## PROMOTIONS

## In salary alone

E. R. Cary  
 E. F. Chillman  
 J. H. Emigh  
 G. B. Waite

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

The course in civil engineering is now the only course of the institute. All the regular members of the institute pursue this course, and the degree conferred is that of civil engineer.

Any person of the requisite age, having good abilities, studious habits, and a thorough preparation, can complete the course in four years; a graduate of a college, by completing the first two years' work in one year, usually in three years. No person can be admitted as a candidate for the degree after the beginning of the fourth year.

Formerly, courses of instruction were given in several other kindred subjects; but it became necessary, a few years ago, to discontinue those courses, in order to concentrate the entire work of the institute upon the course of civil engineering alone.

Civil engineering is understood to include mechanical or dynamical engineering, road engineering, bridge engineering, hydraulic engineering, steam engineering, electrical engineering, mining engineering, and sanitary engineering.

The studies of the course are designed to secure to all the graduates a professional preparation, at once thorough and practical, for the following specialities of engineering practice:

The location, construction, and superintendence of public works, as railways, canals, water works, etc.; the design, construction, and management of mills, iron works, steel works, chemical works, and pneumatic works; the design and construction of roofs, arch bridges, girder bridges, and suspension bridges; the survey and superintendence of mines; the design, construction and use of wind motors, hydraulic motors, air engines and the various kinds of steam engines; the design, construction and use of machines in general, and the determination of their efficiency; the survey of rivers, lakes and harbors, and the direction of their improvements; the determination of latitude, longitude, time and the meridian in geographical explorations, or for other purposes, together with the projection of maps; the selection and test of materials used in construction, and the construction of the various kinds of geometric and topographic drawings.

### Summer course in chemistry and assaying

During the summer vacation, six weeks' courses in qualitative and quantitative analysis and assaying are given to such graduates and students of the institute, and to such other persons, properly qualified, as may desire to take them; provided, classes can be formed of not less than 12 members.



## COURSE IN CIVIL ENGINEERING

## FIRST YEAR

Mathematics—Wells' University algebra; Wentworth's Text book of geometry; Wood's Trigonometry, analytic, plane and spheric  
Descriptive geometry—Warren's Elementary plane problems—plates;  
Warren's Elementary projections—theory and plates  
Stereotomy—Warren's drafting instruments and operations—theory and plates  
Physics—Atkinson's Ganot's elementary physics through acoustics  
French language—Fasquelles French grammar  
English language—Gunning's Practical rhetoric  
Geodesy—Gillespie's Chain and compass surveying—theory and practice; Farm surveying—practice

## SECOND YEAR

Mathematics—Higher algebra; analytic geometry  
Descriptive geometry—General orthographic projections—theory and practice  
Stereotomy—Bridge drawing; shades and shadows—theory and plates;  
linear perspective—theory and plates  
Chemistry—Inorganic  
Physics—Heat, optics  
Natural history—Botany  
French language—Syntax of grammar, with exercises and writing from dictation; translation of scientific works; epistolary correspondence and conversation  
English language—Composition; elements of criticism  
Geodesy—Plane table surveying—theory and practice; Adjustment and use of field instruments—theory and practice; Trigonometric and topographic surveying—theory; Trigonometric surveying and leveling—practice; Mine surveying—theory  
Topographical drawing—Map of farms survey; Colored topography—plates  
Free hand drawing—Sketches of tools, of the components of machines, of bridges and other structures

## THIRD YEAR

Mathematics—Differential and integral calculus  
Astronomy—Descriptive astronomy  
Rational mechanics—Mechanics of solids and fluids; Mechanical problems  
Stereotomy—Machine construction and drawing—theory and plates  
Physics—Electricity and magnetism—theory and practice  
Natural history—Mineralogy and petrography; Descriptive and technical geology  
Chemistry—Qualitative analysis; blow-pipe analysis; Determinative mineralogy; Practical chemistry  
Geodesy—Hydrographic, topographic and town surveying—practice  
Topographical drawing—Contour map; map of hydrographical survey

## FOURTH YEAR

Astronomy—Spheric and practical astronomy  
Physics—Thermodynamics; Electrodynamics  
Physical mechanics—Mechanics of solids—friction,—strength of materials; Mechanics of fluids—practical hydraulics,—practical pneumatics  
Machines—General theory of machines; Description of machines; Theory of prime movers—steam engines,—air engines,—electromagnetic engines,—hydraulic motors,—wind motors; construction and location of machines; Designs for, and reviews of special machines; measurement and estimate of power; Weir, and other measurements of the flow of water  
Constructions—Equilibrium and stability of structures—revetement walls; reservoirs; roofs, arches, girder bridges; suspension bridges; designs for and reviews of special structures  
Stereotomy—Stone cutting—theory and plates  
Geodesy—Higher geodesy; Projection of maps—theory; Line surveying—road surveys—staking out for constructions  
Road engineering—Common roads, railroads, canals, tunnels  
The steam engine—Lectures; indicating and estimating the power of steam engines; Duty tests of water-works pumping machinery; Compound and multiple-expansion engines  
Metallurgy—General metallurgy; Iron metallurgy  
Topographical drawing—Plans, profiles and sections of railroad surveys  
Law—Contracts

# COURSE IN NATURAL SCIENCE

## THIRD YEAR

### WINTER SESSION

Mathematics—Calculus (shorter course)  
Astronomy—Descriptive astronomy  
Physics—Electricity and magnetism  
Natural history—Mineralogy, petrography and zoology  
Chemistry—Introductory chemical practice; Qualitative analysis

### SUMMER SESSION

Chemistry—Qualitative analysis; Blow-pipe analysis  
Natural history—Geology; Lithology; Excursions  
Histology—Use of the microscope, with examination of animal and vegetable tissues  
Drawing—Contour map  
Language—French

## FOURTH YEAR

### WINTER SESSION

Chemistry—Quantitative analysis; Gravimetric analysis  
Metallurgy—General metallurgy; Iron metallurgy  
Natural history—Physical geography  
Language—French or German

### SUMMER SESSION

Chemistry—Quantitative analysis; Volumetric analysis; Technical chemistry  
Natural history—Paleontology; Determinative mineralogy; Petrography; Excursions  
Physics—Experimental physics  
Language—French or German  
Law of contracts  
Preparation of thesis

<sup>1</sup> The studies of this course are identical with those in civil engineering for the first two years.

## REQUIREMENTS FOR GRADUATION

Public examinations of all the classes of the institute are held immediately preceding the close of each semi-annual session.

In addition to the other examinations of the summer session, each candidate for a degree is required to prepare and defend a thesis on some subject of immediate relation to the studies of his course. The thesis of a candidate for a degree is required to be either a review of, or a design for a machine, structure, or process, belonging to a department of scientific or practical technics. It must be fully elaborated, in accordance with the instructions given for this purpose, and accompanied by the necessary illustrative or working drawings, models, or other preparations requisite for the proper elucidation of the subject of the thesis, and adaptation, if a design, to practical use.

The institute confers the degree of civil engineer or bachelor of science on all its graduates who complete the courses leading to such degrees.

*Conditions*—The candidate must have sustained a satisfactory examination in all the studies of the course in civil engineering, or in that leading to the degree of bachelor of science; his thesis must have been approved by the faculty, he must have paid all dues to the institute; he must be of good moral character.

## BUILDINGS

Main building, four story brick, built 1863-4, floor area 21,200 sq. ft., nine class rooms, 250 seats, value about \$31,000. Chemical laboratory, three story brick, built 1865-6, floor area 8,400 sq. ft., two class rooms, 60 seats, value about \$20,000. Observatory, one story brick, built 1877-8, floor area 2,280 sq. ft., value about \$12,000. Gymnasium, two story brick, built 1884-6, floor area 7,040 sq. ft., value about \$16,000. Rankin house, two story brick, floor area 3,000 sq. ft., three class rooms, 55 seats, value about \$18,000. Library and museum in main building.

## COLUMBIA COLLEGE

## SCHOOL OF MINES

*Madison av. and 49 st., New York*

For historic sketch and trustees see Columbia College, pp. 543-545.

## ADMINISTRATION

Figures in column at left give first year of service in Columbia School of Mines.

1890 President, Seth Low, LL. D.

See also Columbia College, School of Arts.

1864 Dean, Charles F. Chandler, Ph. D., M. D., LL. D.

Registrar, George F. Fisher.

## INSTRUCTION

Figures in column at left give first year of service in Columbia School of Mines and years spent in teaching.

1864 Thomas Eggleston, E. M., Ph. D., LL. D. Professor of  
27 Mineralogy and Metallurgy, 35 W. Washington sq.

Yale 1854; School of Mines, Paris 1860; Ph. D. Princeton 1874; LL. D. Trinity 1874; Legion of Honor, France 1890; Member American Institute of Mining Engineers, American Society of Civil Engineers, American Society Mechanical Engineers; Author Lectures on mineralogy, 1886, Diagrams of crystallography, 1890, Tables of weights and measures compared, 1880, Metallurgy of gold, silver and mercury, 1887, Catalogue of minerals with their synonyms.

1864 Charles F. Chandler, Ph. D., M. D., LL. D. Dean and Professor of Chemistry, 51 E. 54 st.

William G. Peck, M. A., Ph. D., LL. D. Professor of  
44 Mechanics, Greenwich, Ct.

See also Columbia College, School of Arts.

J. Howard Van Amringe, M. A., Ph. D., L. H. D. Professor of Mathematics, 115 W. 44 st.

1863 Ogden N. Rood, M. A. Professor of Physics.

31 See also Columbia College, School of Arts.

1866 John S. Newberry, M. D., LL. D. Professor of Geology and Paleontology.



- 1877 William P. Trowbridge, Ph. D., LL. D. Professor of Engi-  
21 neering, 7 E. 46 st., New Haven.

M. A. Rochester University 1856, Yale 1871; Ph. D. Princeton 1880; LL. D. Trinity 1881, University of Michigan 1887; Lieutenant Corps Engineers, U. S. Army 1848-56; Professor, University of Michigan 1856-7; In charge U. S. Engineer agency, New York 1861-5; Professor of engineering, Sheffield Scientific School 1871-7; Member National Academy of Science, American Philosophical Society, American Society of Mechanical Engineers, American Institute of Electrical Engineers; Author of a work on heat; Associate editor Johnson's universal encyclopedia.

- 1877 Henry S. Munroe, E. M., Ph. D. Adjunct Professor of  
16 Surveying and Practical Mining, 45 Sidney pl., Brooklyn.

E. M. Columbia 1869, Ph. D. 1870; Professor of geology and mining, University of Tokio 1875-6; Vice-president American Institute of Mining Engineers; Author of various contributions to scientific periodicals.

- 1881 William R. Ware, B. S. Professor of Architecture, 126 E.  
28 st.

- 1876 Frederick R. Hutton, C. E., Ph. D. Professor of Mathe-  
14 matical Engineering, 296 Lexington av.

B. A. Columbia 1873, M. A. 1876, C. E. and M. E. 1876, Ph. D. 1881; Instructor in mechanical engineering 1877-81; Professor of mechanical engineering 1882-; Member American Institute Mining Engineers; Secretary American Society Mechanical Engineers; Author of Monographs on Machinery published by Department of Interior, Washington, 1885; Editor Transactions of American Society Mechanical Engineers, 1883-.

- 1873 John K. Rees, M. A., E. M. Professor of Geology and  
18 Practical Astronomy and Director of the Observatory,  
"The Dakota," 1 W. 72 st.

See also Columbia College, School of Arts.

- 1871 Elwyn Waller, M. A., E. M., Ph. D. Professor of Analytic  
Chemistry, 33 W. 15 st.

- 1871 Pierre De Peyster Ricketts, E. M., Ph. D. Professor of  
Assaying, 115 E. 79 st.

- 1876 Jasper T. Goodwin, LL. B., M. A. Adjunct Professor of  
15 Mathematics, 929 Park av.

See also Columbia College, School of Arts.

- 1887 Alfred D. F. Hamlin, M. A. Adjunct Professor of  
11 Architecture, 57 E. 76 st.

B. A. Amherst 1875, M. A. 1885; Special assistant in architecture, School of Mines 1883-7; Instructor in architecture 1887-9; Assistant Professor 1889-90, Adjunct Professor 1890; Author of occasional contributions to architectural journals.

- 1884 John S. Billings, M. D. Lecturer on Hygiene and Sanitary  
Science, Washington, D. C.

M. A. Miami University 1860; M. D. Medical College of Ohio, Munich 1889; LL. D. Edinburgh 1884, Harvard 1886; D. C. L. Oxon 1889; Major and surgeon, U. S. Army; Director of laboratory of hygiene, University of Pennsylvania; Member National Academy of Science, American Public Health Association, American Social Science Association, American Academy of Medicine, American Association for the Advancement of Science, National Academy of Science, American Academy of Political and Social Science, American Statistical Association, American Surgical Association, American Philosophical Society, Congress American Physicians and Surgeons; Honorary member Statistical Society of London, Royal Medical and Chirurgical Society, Medical Society of London, Society of Medical Officers of Health, London, Société Française hygiène, Paris, Medical Society of Sweden, Epidemiological Society of London, Arztlicher Verein in München.

- 1889 Russell Sturgis. Lecturer in Architecture, 307 E. 17 st.

- 1875 James S. C. Wells, Ph. D. Instructor in Qualitative Analysis,  
16 Hackensack, N. J.

Ph. B. Columbia 1875, Ph. D. 1877; Assistant in quantitative analysis, School of Mines 1875-9; Fellow Chemical Society (London).

- 1865 Alexis A. Julien, M. A., Ph. D. Instructor in Biology and  
26 Microscopy and Assistant in Chemistry.

B. A. Union 1859, M. A. 1864; Ph. D. University of the City of New York 1882; Assistant in chemistry, Union 1859-60; Assistant in chemistry, School of Mines 1865- ; Instructor in biology and microscopy 1885- ; Fellow New York Academy of Science, American Association for the Advancement of Science, Royal Microscopical Society, Geological Society of America, American Society of Naturalists.

- 1882 Alfred J. Moses, E. M., Ph. D. Adjunct Professor of  
10 Mineralogy.

E. M. Columbia 1882, Ph. D. 1890; Assistant in mineralogy 1882-5; Instructor in mineralogy and metallurgy 1885-90; Adjunct professor of mineralogy 1890- ; Member American Institute of Mining Engineers.

1881 James L. Greenleaf, C. E. Instructor in Engineering and Drawing, Llewellyn park, Orange, N. J.

1884 Charles E. Colby, E. M., C. E. Adjunct Professor of Organic Chemistry, 1933 Madison av.

E. M. and C. E. Columbia 1877; Member Société Chimique de Paris; Deutschen Chemischen Gesellschaft zu Berlin; Fellow in chemistry, Columbia 1884-6, Instructor in organic chemistry 1887-90, Adjunct professor of organic chemistry 1890- .

1883 Ferdinand G. Wiechmann, Ph. D. Instructor in Chemical Philosophy and Chemical Physics.

Ph. B. Columbia 1881, Ph. D. 1882; Fellow in chemistry, School of Mines 1883-6; Fellow New York Academy of Science; Author Sugar analysis, 1890.

1879 Nathaniel L. Britton, E. M., Ph. D. Adjunct Professor of Botany.

1887 Frank Dempster Sherman, Ph. B. Instructor in Architecture, 6 71 E. 87 st.

Ph. B. Columbia 1884; Author Madrigals and catches, 1887, Lyrics for a lute, 1890.

1889 Francis B. Crocker, E. M. Instructor in Electrical Engineering, 54 W. 21 st.

E. M. Columbia 1882; Vice-President American Institute of Electrical Engineers.

1877 Louis H. Laudy, Ph. D. Assistant in General and Applied Chemistry.

1882 Ralph E. Mayer, C. E. Instructor in Drawing.

1886 Ira Harvey Woolson, E. M. Instructor in Practical Mining and Drawing, 38 W. 24 st.

E. M. Columbia 1885.

1886 Joseph Struthers, Ph. B. Assistant in Metallurgy, 624 E. 5 136 st.

Ph. B. Columbia 1885; Member American Institute of Mining Engineers.

L. Harold Jacoby, B. A. Assistant in Geodesy and Practical Astronomy, 15 W. 53 st.

See also Columbia College, School of Arts.

1888 H. Hensoldt, Ph. D. Assistant in Natural History, 197 Hendrix st., E. New York.

- 1889 Michael I. Pupin, Ph. D. Instructor in Mathematical  
2 Physics, 68 W. 72 st.  
B. A. Columbia 1883; Ph. D. University of Berlin 1889;  
Instructor in mathematical physics, School of Mines 1889- ;  
Member American Metrological Society, American Institute  
of Electrical Engineers.
- 1889 Greenville T. Snelling, B. S. Assistant in Architecture,  
Calumet club.
- 1889 Reginald Gordon, B. A. Assistant in Physics, 76 Park av.  
3 See also Columbia College, School of Arts.
- 1889 Maximilian K. Kress. Curator of the Architectural Collec-  
tions.
- 1879 Henry C. Bowen. Fellow in Chemistry and Assistant in  
Quantitative Analysis, 212 E. 50 st.
- 1883 Hermann T. Vulte, Ph. D. Fellow in Chemistry and  
Assistant in Qualitative Analysis.
- 1888 Francis M. Simonds, E. M., Ph. D. Fellow in Chemistry  
and Assistant in Assaying, 147 E. 34 st.
- 1887 John I. Northrop, E. M., Ph. D. Fellow in Geology.
- 1887 Lea McL. Luquer, C. E. Assistant in Mineralogy.  
4 Fellow in Mineralogy 1887-9, Assistant in Mineralogy 1890- .  
John M. Banks, E. M. Honorary Assistant in Assaying.
- 1889 Bashford Dean, M. A., Ph. D. Honorary Assistant in  
Geology, 41 Highland av., Yonkers.  
B. A. College of the City of New York 1886; M. A. Columbia  
1889, Ph. D. 1890; Junior assistant in chemistry, University  
Medical School 1885-6; Tutor in natural history, College of  
the City of New York 1886- ; Instructor in biology, Barnard  
College 1890; Director Summer School of Biology, Cold  
Spring Harbor 1890; Author of contributions to New York  
State Fish Commission report.
- 1889 William H. Freedman, C. E. Honorary Assistant in  
1 Electrical Engineering, 120 W. 125 st.  
C. E. Columbia 1889; Member American Institute of Electri-  
cal Engineers.
- 1889 Edward Gudeman, Ph. B., F. C. S. Honorary Assistant in  
2 Chemistry, 40 E. 69 st.  
Ph. B. Columbia; Lecture assistant, College of Phar-  
macy 1889-90; Professor of chemistry, Pennsylvania Museum  
and School of Industrial Art 1890- ; Member of German  
Chemical Society; Fellow London Chemical Society, Ameri-  
can Chemical Society, Franklin Institute; Author of  
chemical articles in various scientific journals.



Marmaduke B. Holt, E. M. Honorary Assistant in Mining Engineering, 287 Lexington av.

1889 Arthur S. Ives, C. E. Honorary Assistant in Mechanical Engineering, 33 Sidney pl., Brooklyn.

C. E. Columbia 1889; Honorary assistant in mechanical engineering 1889-; Assistant in Summer School in surveying, School of Mines 1890.

1890 Thatcher T. P. Luquer, C. E. Fellow in Surveying and Practical Mining, 618 Henry st., Brooklyn.

C. E. Columbia 1889.

James Maclay, C. E. Honorary Assistant in Mathematics, 187 Union st., Newark, N. J.

1889 Joseph T. Monell, C. E. Honorary Assistant in Astronomy,  
1 236 W. 22 st.

C. E. Columbia 1889.

1885 Charles Ernest Pellew, E. M. Honorary Assistant in  
6 Applied Chemistry, 51 E. 54 st.

E. M. Columbia 1884; Honorary fellow in bacteriology 1885-8; Honorary assistant in applied chemistry, 1888-; Assistant in medical chemistry, College of Physicians and Surgeons, 1887-; Demonstrator of physics and chemistry 1890-; Author lessons in medical chemistry, 1889.

1890 Edwin M. Blake, E. M. Assistant in Mechanical engineer-  
1 ing, 230 Washington av., Brooklyn.

E. M. Columbia 1890.

1889 Gustav J. Volckening, jr, Met. E., E. M. Honorary Assistant in Metallurgy, 653 Lafayette av., Brooklyn.

Met. E. Columbia 1888, E. M., 1889; Member American Institute of Mining Engineers.

1888 Ernest R. Von Nardroff, E. M. Honorary Assistant in  
9 Mathematics, 485 Carlton av., Brooklyn.

Instructor in physics, Brooklyn Heights Seminary 1882-7; Lecturer in physics, Evening High School, Brooklyn 1888-; Member New York Mathematical Society.

1888 Delancey W. Ward, Ph. B. Assistant in Organic Chemistry,  
3 Whitestone, L. I.

Ph. B. Columbia 1888.

Edwin H. Wedekind, Ph. B. Honorary Assistant in Geology,  
4 Van Nest pl.

1890 C. A. Hollick, Ph. B. Fellow in Geology.

## VACANCIES

George S. Percival, C. E. Honorary Assistant in mechanical engineering. Resigned.

F. J. H. Merrill, Ph. B. Fellow in geology. Resigned 1 Jl, 1890.

F. W. Denton, C. E. Fellow in engineering. Resigned.

## APPOINTED DURING YEAR

Edwin M. Blake, E. M. Assistant in mechanical engineering

Russell Sturgis. Lecturer in architecture

Francis B. Crocker, E. M. Instructor in electrical engineering

G. T. Snelling. Assistant in architecture

M. K. Kress. Curator of the architectural collections

C. A. Hollick, Ph. B. Fellow in geology

F. W. Denton, C. E. Fellow in engineering

T. T. P. Luquer, C. E. Fellow in engineering

Lea McL. Luquer, C. E. Assistant in mineralogy

## PROMOTIONS

## In title alone

A. D. F. Hamlin, M. A. Assistant professor in architecture, from instructor in the same.

Michael Pupin, Ph. D. Instructor in mathematical physics in electrical engineering course, from assistant teacher in the same.

## In both title and salary

Alfred J. Moses, C. E. Adjunct professor of mineralogy, from instructor in the same.

Charles C. Colby, E. M., C. E. Adjunct professor of organic chemistry, from instructor in the same.

Nathaniel L. Britton, E. M., Ph. D. Adjunct professor of botany, from instructor in the same.

Ralph E. Mayer, C. E. Instructor in drawing, from assistant in the same.

Ira H. Woolson, E. M. Instructor in drawing, from assistant in the same.

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
John Tyndall fellowship, Thomas C. Coykendall, Rondout. .	\$648
Columbia fellowship in architecture, Arthur Alexander Stroughton . . . . .	1,300

## REQUIREMENTS FOR ADMISSION

See table 3.

## COURSES OF STUDY

## DEPARTMENTS OF INSTRUCTION

## Mathematics

The students of the first class attend four hours a week throughout the year. In the first session they are taught trigonometry, plane, analytic and spheric, with the solution of many practical problems by formulæ and by construction, and the mensuration of surfaces and of volumes.

In the second session they complete the subject of algebra, including general principles, properties of logarithms, logarithmic series, general theory of equations embracing principal transformations and properties, derived equations and equal roots, Sturm's theorem and solution of higher equations, and geometric conic sections and analytic geometry.

The students of the second class attend four hours a week throughout the year. In the first session they complete the subject of analytic geometry, with applications to lines and surfaces of second order; and in the second, the differential and integral calculus with some of its applications to mechanics and astronomy; as, center of gravity, moment of inertia, falling bodies, attraction of homogeneous spheres, orbital motion, law of force, etc.

## Mechanics

This subject is taught during the third year. The course of instruction embraces the following subjects:

Representation and measurement of forces; composition, resolution and equilibrium of forces; principles of moments and virtual moments; theory of parallel forces; application to center of gravity; stability.

Elementary machines ; friction, resistance to rolling stiffness of cords, atmospheric resistance. General equations of motion ; rectilineal, uniform and uniformly varied motion, free and constrained ; centrifugal force ; application to the governor ; vibratory motion ; application to the pendulum ; motions of translation and rotation ; moment of inertia, principal axes, and ellipsoid of inertia ; laws of impact ; center of percussion ; general theorem of work ; accumulation of work ; application to fly-wheel.

Mechanics of fluids ; pressure due to weight ; equal transmission of pressures ; application to hydraulic press ; buoyancy and flotation ; application to specific gravity.

Tension and elasticity of gases and vapors ; laws of variation ; application to pumps and siphons ; investigation of the barometer formula ; motion of liquids in pipes and open channels ; living force of fluids ; application to hydraulic ram ; mechanics of capillarity.

### Physics

The students of the first class are occupied during the first term in the study of sound, heat, and the steam engine ; during the second term with the subjects of optics, electricity and magnetism. The courses are fully illustrated by appropriate experiments, and practical problems are occasionally proposed for solution.

To the students of the third class, courses of lectures are delivered on the laws of electrostatics and electro-dynamics, electrical constants, dynamo-electrical machines, electric lighting, etc., on the mechanical theory of heat, on mathematical optics and on the undulatory theory of light. The lectures, except those on the mechanical theory of heat, are fully illustrated by experiments.

### Chemistry

#### GENERAL CHEMISTRY

The first class, in all courses, attends two lectures a week in inorganic chemistry during the entire year ; text-book is also used. It is intended to lay the foundation of a thorough knowledge of the theory of the subject preliminary to the practical instruction in the chemical laboratory. At the end of each term they must pass a rigid examination before being admitted to a higher grade. In the course of analytic and applied chemistry,



attendance is required twice a week, during the second term, in chemical physics.

During the second term of the first year the students in the course of analytic and applied chemistry attend two recitations a week in chemical physics.

The second class, in the course of analytic and applied chemistry, attends four recitations a week throughout the year, in Cooke's Chemical philosophy.

#### ANALYTIC CHEMISTRY

There is a laboratory devoted to qualitative analysis, another to quantitative analysis, and an assay laboratory.

During the first year qualitative analysis is taught by lectures, blackboard exercises and recitations, and the student is required to repeat all the experiments at his table in the laboratory. Having acquired a thorough experimental knowledge of the reactions of a group of bases or acids, single members of the group or mixtures are submitted to him for identification. He thus proceeds from simple to complex cases, till he is able to determine the composition of the most difficult mixtures.

When the student shows, on written and experimental examinations, that he is sufficiently familiar with qualitative analysis, he is allowed to enter the quantitative laboratory.

During the second and third years quantitative analysis is taught by lectures and recitations, and the student is required to execute in the laboratory, in a satisfactory manner, a certain number of analyses. He first analyzes substances of known composition, such as crystallized salts, that the accuracy of his work may be tested by a comparison of his results with the true percentages.

These analyses are repeated till he has acquired sufficient skill to insure accurate results. He is then required to make analyses of more complex substances, such as coals, limestones, ores of copper, iron, zinc and nickel, pig-iron, slags, air, water, foods, disinfectants, technical products, etc.,—cases in which the accuracy of the work is determined by duplicating the analyses and by comparing the results of different analyses.

Volumetric methods are employed whenever they are more accurate or more expeditious than the gravimetric methods.

## ORGANIC CHEMISTRY

The general principles of this subject are taught by lectures and recitations during the second session of the second year. More detailed instruction is given to the students in the course of analytic and applied chemistry during the fourth year, when they are admitted to the organic laboratory. This instruction continues during the entire year, and consists of lectures, recitations, informal blackboard conferences in the laboratory and analytic and synthetic work at the laboratory table.

The laboratory work of each student consists of :

1—Ultimate analysis, including determinations of carbon, hydrogen, nitrogen, sulphur and haloid elements in organic substances; determination of vapor densities, specific gravities, melting and boiling points and calculation of formulæ.

2—Preparation, by synthesis, of a limited number of organic compounds. The student is taught to apply, experimentally, the reactions learned in the lecture room, the object being to familiarize him with the various methods of synthesis.

3—Applications of organic chemistry to the arts, especially the use of the artificial coloring matters prepared by the students, such as rosanilin, alizarin, indigo, etc., to dyeing and calico printing and the testing of commercial colors and mordants.

4—A complete but concise memoir on each substance prepared, including its history, preparation, constitution, properties, applications and a list of references to its literature.

## ASSAYING

During the third and fourth years, the student is admitted to the assay laboratory, where he is provided with a suitable table and a set of assay apparatus, and where he has access to the sampling and ore-testing machinery, crucible and muffle furnaces, and to volumetric apparatus for the assay of alloys.

The course includes : 1—Lectures and recitations. 2—Practical work.

The lectures treat of and describe the furnaces, fuels, apparatus, reagents, etc. employed, and explain the general principles as well as the special methods of sampling and assaying. Models and lantern views of the furnaces and apparatus are shown, and the ores of the various metals and the appropriate fluxes are exhibited and described.

The practical work includes the testing of reagents and small samples of ore, practice on methods, and special work to familiarize the student with sampling large lots of ore, and to give practice in mill and furnace assay.

The student is supplied with the different ores, and is required to assay each under the immediate supervision of the instructor.

#### APPLIED CHEMISTRY

The instruction in applied chemistry extends through the second, third and fourth years, and consists of lectures and recitations illustrated by experiments, diagrams and specimens. Wagner's *Chemische technologie* is used as a text-book.

*Second year* — Air ; nature, sources of contamination, sewer gas, plumbing, draining, disinfection, ventilation, water, composition of natural waters, pollution, disposal of sewage and house refuse ; artificial illumination, candles, oils and lamps, petroleum, gas and its products, electric light ; photography ; limes, mortars and cements ; building stones, decay and preservation ; timber and its preservation, pigments, paints, essential oils, varnishes, preserving processes ; glass and ceramics ; explosives, gunpowder, gun-cotton, nitro-glycerine, etc. ; electro-metallurgy.

*Third and fourth years* — Chemical manufactures : acids, alkalies, and salts, including sulphur, common salt, sodium, iodine, etc. ; food and drink : milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food, etc. ; clothing : textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india-rubber, gutta-percha, etc. ; fertilizers : guano, superphosphates, poudrettes, etc.

#### Geology and paleontology

*First year* — Botany, as an introduction to paleontology — lectures throughout the year.

*Second year* — Zoology, as an introduction to paleontology — lectures throughout the year.

*Third year* — Lithology ; minerals which form rocks and rock masses of the different classes — lectures and practical exercises.

Geology ; cosmic, physiographic and historic — lectures and conferences throughout the year.

*Fourth year* — Economic geology ; theory of mineral veins ; ores ; deposits and distribution of iron, copper, lead, gold, silver,



mercury and other metals; graphite, coal, lignite, peat, asphalt, petroleum, salt, clay, limestone, cements, building and ornamental stones, etc. — lectures and conferences throughout the year.

## Mineralogy and metallurgy

### MINERALOGY

The studies in mineralogy, except for students in the course of civil engineering, continue throughout two years. During the first year the students are instructed in the use of the blow-pipe and in crystallography.

The instruction in blow-pipe analysis lasts through the first half of the year. It consists in: preliminary tests on the purity and intensity of the oxidizing and reducing flames, roasting, flaming, etc.; characteristic tests upon the different oxides; analyses of compounds of varying complexity and known composition; analyses of mixtures, alloys, minerals and salts of unknown composition.

The collection of blow-pipe substances consists of 300 compounds, exclusive of minerals. Students are taught to examine, qualitatively, different commercial alloys, and a large number of the natural combinations.

At the commencement of the second term the lectures on crystallography commence. They embrace the entire subject of crystallography, including the descriptions of both normal and distorted forms.

Conferences and examinations are held during the term, in which the students are required to determine models of the theoretical forms as well as those found in minerals.

At the commencement of the second year the students are taught theoretical mineralogy, including the optical and physical properties of minerals. For the study of sections the students are taught the use of Groth's polariscope, and of goniometers. They are required to determine minerals by inspection, aided by simple tests, or, when testing is not expedient, by asking questions with regard to those characteristics which can not be determined without experiment. They are required to give the name, the composition, the crystalline form, and the prominent chemical and physical characteristics of the mineral they determine. They are also required to determine such minerals as they are likely to find in the field, by testing them with the



blow-pipe and such reagents and instruments as they are likely to have in the outfit of an ordinary survey.

The instruction in mineralogy for civil engineers is given in the second year of the course. It comprises brief courses in blow-pipe analysis and crystallography, sufficient for the determination of simple mixtures and minerals, a series of lectures on the rock-forming minerals, their occurrence, their effect on building stones and the methods for their determination.

Other minerals of economic importance, such as the common ores, and the minerals used in the manufacture of paints, cements, etc., are described, and their applications in the arts briefly specified.

#### METALLURGY

The lectures in metallurgy continue through two years, and discuss in detail the methods in use for working ores in the best establishments in this country and in Europe. They include: general metallurgy; metallurgy of iron; metallurgy of steel; metallurgy of copper, lead, silver, gold, zinc, tin, mercury, etc.

1 *General metallurgy*—The lectures in general metallurgy embrace the subjects of combustion; refractory materials, furnaces, natural fuels (wood, peat, lignite, bituminous and anthracite coals, natural gas), artificial fuels (charcoal, peat charcoal, coke, and combustible gases, manufactured in producers); chimneys, the different kinds of blast engines, methods of heating blast, regulators, hot-blast ovens, and tuyeres.

2 *Metallurgy of iron*—The metallurgy of iron consists in the discussion of: the general properties of iron ores and slags; lifts; the theory of the blast-furnace process (the causes of variation in the working produced by the blast, by the fuels, by the variations in the charge and by the form of the furnace; the effects of moisture); the methods of ascertaining the cost; the calculations of the heat developed and lost in the furnace; melting the iron in crucibles; cupolas and reverberatory furnaces; moulding; the methods of making the moulds; the precautions required in casting; and the manufacture of malleable cast-iron.

In the manufacture of wrought-iron from cast-iron, there are discussed: the German process and its modifications; the English processes; including fining; the dry and boiling processes in puddling; stationary and rotary furnaces; shears; hammers; squeezers; saws; rolls; reheating in ordinary and regenerator

furnaces; two and three-high trains; and the method of calculating cost of wrought-iron.

In the direct processes of manufacture of iron from the ore the Catalan process and its derivatives are discussed.

3 *Metallurgy of steel* — In the metallurgy of steel there are discussed the processes of manufacture of: low-furnace and puddled steel, cement steel, crucible steel, basic and acid Siemens-Martin steel; basic and acid Bessemer steel; the utilization of scrap iron; and the manufacture of sheet-iron, nails, wire and rails.

4 *Metallurgy of the metals*. COPPER — The lectures on copper include: the treatment of native copper; the treatment of pure sulphurous ores by the Swedish, German and mixed methods in Europe and in the United States; the treatment of rich pure ores; the treatment of impure ores in the Hartz Mountains and in the United States; the treatment of very poor ores by lixiviation; the treatment of rich and pure ores by the English methods in the reverberatory furnace in Europe and in the United States and the treatment of rich and impure ores in the same furnace; the treatment of oxidized ores in Europe and in the United States; the mixed methods in Europe and in the United States; the treatment of oxides and the wet methods.

LEAD — The lectures on lead include: the method of roasting and reaction, in France, in England, and in the United States; the method of roasting and reduction; method by precipitation in France, in Germany, and in the West; the mixed method in France, in Germany, and in the West; the refining of lead; the extraction of silver by the Pattinson method and by zinc; cupellation and condensation of volatile products.

SILVER — The lectures on silver include: the treatment of silver ores in furnaces in Germany and in the United States; the separation of silver by Saxon, by Mexican, or by pan amalgamation; the treatment in the wet way, by Augustin's method, by Ziervogel's method, by Von Paterna's method, and by Russel's method; and the refining of silver.

GOLD — The lectures on gold include: washing; sluicing; hydraulic mining; Plattner's process; parting gold and silver.

TIN — The lectures on tin include: the treatment of tin, in shaft furnaces and in reverberatory furnaces.

**ZINC** — The lectures on zinc include: the Silesian, Belgian, and English methods.

**MERCURY** — The lectures on mercury include: the treatment of ores of mercury by precipitation and by roasting.

There are also discussed the treatments of ores of antimony, nickel and cobalt, and bismuth.

It is designed to make these lectures as practical as possible, and for this purpose the economic details of cost are given whenever they can be obtained from authentic sources. Special attention is given to the ores of this country which are difficult to treat, to the solution of practical problems which may occur and to changes which different economic relations are liable to cause in the treatment of the same ore in different localities.

As an application of the lectures, the students are required to work out a project, and to present working drawings and estimates for the erection of works to treat a given ore under stated conditions. The problems given are those which require solution in some parts of the United States.

### Engineering

The courses in mining engineering and civil engineering are identical in all that pertains to these subjects in common. But as these courses necessarily differ, an arrangement has been made to utilize the time of the instructors in the best manner and at the same time avoid a repetition of the same instruction to different classes.

The collateral branches of study for the engineering courses, chemistry, metallurgy, geology, subjects quite as essential to mining and civil engineers as physics and mechanics, have also been assigned to these two courses, in accordance with the general requirements of the respective professions.

#### DRAWING, DESCRIPTIVE GEOMETRY, ETC.

The course in drawing embraces instrumental drawing, descriptive geometry, shades, shadows and perspective, stone-cutting, isometric drawing, topographical and geological drawing, drawings of engineering constructions and machinery.

The first year is devoted to the elements of instrumental drawing, the use of instruments, lettering, projections of objects, plans, sections and elevations, intersection of solids and of surfaces, the development of surfaces, and the study of descriptive geometry.



During the second year, the first session is occupied in the study of shades, shadows and perspective, isometric drawing, and the construction of problems in stone-cutting.

During the second session the subjects of perspective, tinting, grading and scale construction drawing are taken up in the same manner. Practice is also given in drawing the simple elements of architecture, such as the plans of private and public buildings, showing the details of walls, floors, windows, and door casings, etc.

The drawing of the third year is intended to teach the student the conventional application of drawing to various types of design, in which it serves as a specification. Incidentally, a general insight is gained into the nature of designs.

The course includes work from pieces of machinery and from bridges, roofs, and miscellaneous structures in New York and vicinity. Reference is had to blue prints, etc., donated by various machine-shops, bridge works, and engineering offices, in order to show the student the manner of making practical working drawings. He is required to go into the field and take sketches, and from these make complete working drawings in the drawing-room.

The drawing and engineering design of the fourth year are intimately connected. A variety of stress sheets of graphic statics are first drawn, and the remainder of the time is devoted to the designing of engineering structures along the lines described in the lectures on the subject, including the making of bills of materials and complete working drawings.

#### SURVEYING

The instruction in surveying is given in a special summer class during the vacations between the first and second and between the second and third years. 10 or 12 weeks in all are devoted to practical work in the field, supplemented by lectures and instruction in the theory of surveying, and office-work for the computation of surveys and construction of maps.

The following exercises and surveys are required of each squad of students :

Exercises for determining length of pace, and practice in pacing ; survey of a field by pacing ; exercises in sketching contour lines, and topographical details—two examples ; exercises



in chaining over level and sloping ground, and in construction of right angles and parallel lines with chain; exercises in ranging straight lines with sight-poles under different conditions; exercise in reading compass bearings; survey, with compass and chain, of a farm of about 20 acres, including location of fences, roads, and farm buildings, correction of bearings for local attraction, computation of latitudes, departure and area, and a plat; adjustment of hand-level and exercise in levelling; topographical survey on rectangular plan, with compass, chain, and hand level, determining minor details by pacing, with finished map of area surveyed; adjustments of the transit; triangulation. As an exercise for practice in the use of the transit each squad is required to make three or four sets of readings of each angle of a triangle, each set including six repetitions; determination of true meridian, by observation on Polaris; traverse of a polygon of about 12 sides, the angles being repeated and the sides measured with a steel tape, with allowances for catenary, temperature, and inclination; computation of ordinates and abscissas, and a plat; adjustment of telemeter wires and measurement of distances by telemeter; azimuth traverse of a polygon, distances by telemeter readings; city survey, exercise in laying out city lots and in determining exact position of house and fence lines—report and plat; adjustments of the wye level; line of levels, about one mile in length, determining levels of stations 100 feet apart, and of benches; plane-table survey—each squad of two men is required to make a survey of about 70 acres, determining all topographical details and locating contours 20 feet apart; United States mineral survey, with the solar compass, of a mining claim 150 feet by 1,500, complying with the requirements of the land office and the instructions of the surveyor-general; for hydrographic survey the squads are increased to six men, and each squad is required to survey about 30 acres, making about 250 soundings, each sounding being located by two transits; the mining-claim survey is required of students in the courses of mining engineering and metallurgy, and the hydrographic survey of students in the course of civil engineering; a magnetic survey with attraction compass and dipping needle, and a stratigraphic survey, with construction of geological sections and lines of outcrops, may replace, for students in mining engineering, one or more of the exercises above noted.

A supplementary optional course in topographical surveying has been organized, including odometer work, surveying by photography, and the use of the transit and plane-table in reconnoissance surveys; with the determination of heights and contours by different methods.

In the vacation between the third and fourth years, the students of mining engineering and of metallurgy, during the session of the summer school of practical mining, make underground surveys and construct maps and sections of the mines visited.

During the fourth year a line of railroad is surveyed, locating the line on the ground, setting grade and slope stakes, levelling, and calculation of cuttings and embankments, drawings and estimates. In addition, the course in railroad engineering for the civil engineers embraces practical lectures on railroad construction, permanent way, rolling stock, motive power, including a complete study and design of the locomotive engine in its various types, and administration of railroads, with instruction in the economics of location and transportation.

#### CIVIL ENGINEERING

Instruction in civil engineering extends through the third and fourth years.

During the third year, the more simple elements of civil engineering and surveying are taught. In civil engineering the various subjects are considered in the following order: *First*, materials—building stones, limes, cements, mortar, concrete, brick, wood, metals; their properties and general qualities, mode of preparation, and their respective uses and combinations in construction, their strength and durability; *second*, masonry—construction of masonry, retaining walls, arches, etc.; *third*, framing—structures of wood, carpentry; *fourth*, stone and wooden bridges—descriptions of various kinds of wood and iron trusses in use, suspension bridges, etc., general principles of roof construction; *fifth*, common-road construction—general principles of railway construction; construction of canals, general principles of rivers, slack-water navigation, etc.

The course of civil engineering in the fourth year embraces the principles of mechanics applied to engineering constructions and to machinery, the strength of materials, the theory of retaining walls and arches; the principles of hydraulics applied to the

improvements of rivers, the water supply of towns, reservoirs, dams, etc.; and the general principles of sanitary engineering, drainage, sewers, house drainage and ventilation.

The afternoons during the fourth year, together with a course of lectures on the subject, are devoted to the application of the principles of engineering to the designing of various structures, such as roofs, cranes, involving machinery, bridges, etc.

Various types of design are explained, both in theory and in construction, and the student is required to determine the stresses for specific problems, dimension the various parts, design the connections, and make thorough working drawings, also bills of material, order bills, and the like.

A course of lectures, 50 or 60 in number, is delivered during the third year to students in civil and mining engineering on the properties of the metals used in engineering constructions. These lectures are devoted principally to iron and steel, but include also other metals and alloys. They treat of the mechanical processes by which these metals are transformed into the shapes required by the engineer, from the crude state in which they are found, after reduction by metallurgical processes from their ores. The physical properties of such fabricated materials, under the various uses and conditions to which they are subjected in engineering construction, are also treated. The lectures are intended to cover, as far as possible, a field of knowledge which of late years has grown into great importance and prominence as an essential branch of an engineer's acquirements, and which connects the science of metallurgy with the art and practice of engineering. This field embraces not only the arts of fabrication of merchant forms, but also the physical and mechanical properties of the metals in such forms: such as coefficients of strength, limits of elasticity, ductility, adaptability for particular uses and different conditions, etc., which vary greatly with the processes through which the metals have passed, and yet from their nature require to be treated in connection with engineering problems. Instruction is also given in inspection and testing of these materials delivered under contract, embracing the usual practical physical tests, and the relations so far as known between chemical analysis and physical characteristics.

In view of the paramount importance of iron and steel to the engineer of to-day, considerable time is devoted to these metals,



the following topics being specially discussed: the inspection and grading of pig-iron, and the suitability of different grades for various kinds of castings; cupola furnaces and cupola mixtures and their effects upon product; special dangers inherent in castings of certain shapes; principles in design of castings; shrinkage strains and lines of weakness in castings; defects due to cores and to moulds; resistance of cast-iron to corrosion and protection from it; inspection of castings — these are included in a first series.

Chilled castings — their characteristics, uses, production, and dangers — and malleable castings are similarly treated, including their action under heat and under tools, and the brazing of castings.

Under the head of wrought-iron are discussed: piling, heating, and rolling of muck bar; effects of heating and rolling on merchant bar; forge uses and tests of bar; requirements of metal for plate, for tube, for wire, and for special forged shapes, such as bolts, etc.; heating, piling, and rolling for shapes or structural iron; points of defect, characteristics of different shapes, adaptability for different uses; possible sections and areas; combination of sections; protection from corrosion; inspection of structural iron; fabrication of ship and boiler plate; methods and processes, properties, defects, requirements, and inspection; fabrication of tube and pipe, lap and butt welded; continuous and universal mills, bending, welding, and straightening rolls, swaging, testing, and tool work; fittings, forms, and uses.

Under the head of steel are treated: properties of crucible steel resulting from its manufacture, such as uniformity of temper, adaptability for tools and cutters: Bessemer and Siemens-Martin steels; properties of ingot metals, mill and furnace treatment for shapes, springs, tires, bars, and plate; characteristics of ingot plate, effects of alloying impurities; steel castings: their production, characteristics, and defects; iron and steel forging; drop forging, die forging, machine forgings, large and small, heating and handling, excellences and sources of defects; burnt iron and steel.

Incidentally to these topics is discussed the machinery for handling the materials in process of manufacture, so far as they are essential to the primary object in view.

After iron and steel follow lectures on a similar plan, discussing brass—cast, rolled, and drawn, copper sheet and tubes,



lead pipe and sheets, zinc and tin—sheet and tube, and galvanized and tin plate, certain alloys for special needs against friction, corrosion, etc., and the brazing and soldering processes for the various metals receive attention at the close.

The students in the civil-engineering course are also instructed in the principles of mechanism, beginning with the general theory of motion; the principles of transmission of motion, the various modes of mechanical connection, the calculation of relative velocities of moving pieces of machinery, valve-gearing, and the mechanism, movements and construction of machinery in practice; the dynamics of machinery or the determination of the relations between the forces which act upon machines and the general application of mechanics to machines; the study of prime movers, including steam-engines, hot-air engines, and water-wheels; the theory and construction of steam-boilers, and the general principles of heat as applied to air and vapors.

#### MINING ENGINEERING

The course of mining engineering is the same as that in civil engineering, in drawing, and surveying, except that the students of mining have additional instruction in underground surveying and geological reconnoissance. The courses in mining and civil engineering are also identical during the third year in all that relates to materials and general principles of engineering constructions, excepting that the course in mining engineering is intended to be more extended in the principles of mechanism and construction of machinery, and less extended in the detailed principles of roof and bridge construction, hydraulics as applied to river improvements, sanitary engineering, water supply of towns, etc.

During the second and third years, the course in mining engineering embraces lectures on practical mining, or miner's work, including excavation of clays, peat, bog-iron ore and other easily worked materials; quarrying for extraction of large blocks of stone, marble, etc.; blasting, drilling tools, hand-boring, use of explosives; well-boring, by hand for exploration, and machine-boring; sinking of shafts and slopes, timbering and driving of adits and levels; in the use of picks and gads in the mining of coal, salt, fire-clay, and other soft rocks, coal-cutting machines, mining of ores and hard rocks, handling of excavated mineral in

working places, underground transportation, tramping by man or animal power; mechanical haulage with chains or wire rope, and by underground locomotives; accidents to men, their cause and prevention; organization and administration; mine book-keeping, accounts with men, time-books, pay-roll, analysis and dissection of mine accounts and making out of cost sheets.

Attendance on the summer class of practical mining is obligatory for students of mining engineering and of metallurgy. The class visits mines and engages in underground work and the study of mine plant and mining methods, under the immediate direction of competent instructors.

The instruction in mining engineering during the fourth year is the same as for the civil engineers in all that relates to the general dynamics of machinery, and to the application of the principles of mechanics to engineering constructions and to the physical properties of materials. It is more extended in the application of machinery to mining purposes, especially in connection with the use of compressed air, pumping and ventilating machinery, and hoisting machinery.

It embraces also the study of mineral deposits; classification and description of veins, beds, and masses, and their geological characteristics, interruptions and intersections; methods of prospecting, of reaching deposits, of prosecuting the underground workings, and methods of making and supporting excavations made for special purposes, junctions of levels, chambers for machines, and of making and supporting excavations in watery strata; proper provisions for pumping and ventilation; general principles to be observed in laying out, opening, and working mines, and methods applicable to special deposits, such as narrow and wide veins or lodes, thick and thin seams of coal; hydraulic mining, etc.; also instruction in the proper administration of mining works, exterior transportation, mine regulations, etc.

A course of lectures on ore dressing includes the general principles of ore dressing, preliminary hand dressing and sorting, and preliminary cleansing and sizing; crushing by hand and with machinery; cleansing in ditches and troughs, in sieves, trommels, and by special machines; sizing, bar gratings, and other stationary screens, riddles, revolving screens, concentration of coarse and fine material by jigs, buddles, tables, etc.; illustrations from

American and foreign practice; mechanical preparation of coal and other minerals, and the concentration and purification of copper, lead, iron, and other ores.

### Hygiene

The object of this course is to give such instruction as to the laws of life and health, the structure of the human body, the general principles of hygiene, first help in accidents and injuries, etc., as should be possessed by every well-educated professional man.

The instruction is given to students in all the courses during the second year, by lectures and recitations, illustrated by diagrams and models.

The subjects discussed are :—

General laws of life: vital force; protoplasm; evolution; development; growth; death.

Human longevity: vital statistics; methods of computation and tabulating, census, birth rates, death rates, life tables.

The skeleton: fractures; dislocations; first help in injuries; handling and carrying wounded; shock; sprains; injuries of head; fainting; signs of death; burns and scalds; poisons.

Blood: composition; coagulation; circulation; hemorrhage; wounds; first dressings.

Muscles: exercise; training; animal heat; production; regulation; the skin and its functions.

Nervous system: structure; reflex action; vaso-motor centres; hypnotism; injuries of nerves; apoplexy; drunkenness; special senses; eye, ear, smell, taste, etc.; reaction time; personal equation.

Causes of disease: heredity; race; diathesis; climate; worry; school hygiene.

Bacteria: classification; culture; disinfection; modes of dealing with contagious diseases.

Digestion: food; diets; adulterations; dangerous meats; milk; canned foods; legislation on food.

Respiration: mechanism; chemistry; suffocation; drowning; artificial respiration; working in compressed air; care of the workmen; effluvia and noxious gases; offensive trades; dusts.

Ventilation: heating in assembly halls; churches; hospitals; theatres; habitations.



Water supply: analysis; biological and chemical; wells; cisterns; pollution of streams; spread of disease by water; typhoid; cholera; malaria; purification of water; filters; aeration; ice and its impurity; jurisprudence of running streams.

Refuse disposal: garbage; cremation furnaces; sewage; composition and disposal; cesspools; irrigation; filtration; precipitation; sewers; combined and separate systems; tidal sewers; house drainage; traps; water-closets; plumbing regulations.

Streets and pavements from a sanitary point of view.

Care of the dead: cemeteries; mortuaries; crematories.

Sanitary jurisprudence: law of nuisance; board of health; quarantine.

#### MICROSCOPY AND BIOLOGY

Practical instruction in the use of the microscope is given. Laboratory instruction for three hours each week is given throughout the second and third years, and lectures in each session of the third year.

*Microscopy* — The microscope stand, its construction, use, care, and choice; simple lens, optical principle, construction, and use; compound lens, lower-power objectives, use, and care; accessory apparatus, general; method of work, illumination, effect of different media; the eyes, peculiarities, use, and protection; drawing, free-hand and with camera lucida; micrometry, preparation of table; magnification, preparation of table; mounting, dry, in liquid and in cells; section cutting, soft and hard tissues, crystals, rock sections, and grains; staining; high-power objectives, use and care, cover-corrections, and immersion fluids; accessory apparatus, special; microchemistry and microspectroscopy; micromineralogy and microlithology; adulteration of foods, etc., detection; fibres and handwriting; photomicrography.

*Biology* — Laboratory examination of unicellular forms of life; yeast; protococcus; amœbæ; bacteria; the moulds (*mucor* and *penicillium*); anatomy of the clam; anatomy of the lobster; anatomy of the frog; biological analysis of natural waters; biological analysis of air; biological examination of disinfectants.

#### Geodesy and practical astronomy

Instruction in geodesy and practical astronomy during the third year embraces:

1 Text-book work, using Peck's *Astronomy* and optics; also lantern lectures on the following subjects, viz., ancient astro-



nomical instruments, telescopes, solar system, the moon, the sun, Mercury and Venus, the planetoids, Mars, Jupiter, and Saturn, Uranus and Neptune, comets and meteors, stars and nebulae, cosmogony. 2 Text-book work in geodesy, using Gore's Elements of geodesy. 3 Lectures on the figure of the earth, theodolites for geodetic work, micrometer, microscopes, etc., eccentricity and errors of graduation, monuments and signals, base apparatus, measurement of base lines, methods of observing angles, Legendre's theorem, records and computations, etc. 4 Lectures in the observatory on the instruments; also opportunities for viewing the heavens.

During six weeks of the summer vacation, at the close of the third year, the students in civil engineering are required to attend the summer school in practical geodesy. The following is an outline of the work done during the summer of 1889:

(1) Use of the almanac for calculating elements needed in reductions.

(2) Conversion of mean time into sidereal time and *vice versa*, and apparent time into mean time and *vice versa*. (3) Values of level divisions obtained by means of the "level trier."

Sextant: (1) Construction of the instrument; (2) Theory of the instrument; (3) Adjustments; (4) Angle measuring; Time by single altitudes of the sun employing artificial horizon, by equal altitudes of the sun, latitude by single altitudes of Polaris, by single altitudes of the sun, by circummeridian altitudes of the sun or stars, time by altitudes of stars, longitude by lunar distances, latitude and longitude by Sumner's method.

Transit instrument clock and chronograph: Construction, theory of instruments, adjustments, star lists and tables, observations and reductions for constants and time error of clock.

Base measuring: Construction of apparatus, adjustments, measurement of a base and reduction of observations.

Angle measuring by repetitions: Construction of instruments, adjustments, observations and reductions.

Angle measuring by directions: Construction of instrument, adjustments, observations and reductions, night observations.

Determination of the true meridian, and the azimuth of a line: Theory of methods, observations and reductions.

Trigonometric leveling: Theory of methods, observations and reductions.

Barometric hypsometry: Construction of instruments, adjustments, formulæ and tables, observations and reductions.

Terrestrial magnetism: Construction of instruments, adjustments, theory of methods, determination of constants.

Instruction in geodesy is continued in the fourth year by: Text-book work, using Doolittle's Practical astronomy, and also by

Lectures on: pendulum observations; magnetic observations; and method of "least squares."

### Architecture

During the first and second years, the time which is given in other courses to laboratory work is in this course given to architectural drawing. This is so laid out as to include exercises in the ordinary processes of draughtmanship, the making of plans, elevations, sections and details, both on a large and on a small scale; the use of pencil and pen, brushes and colors, with auxiliary exercises in tracing and sketching. The examples are so chosen as to make the student familiar with the common-places of architectural form, and are accompanied by lectures upon the elements of architecture, in which the forms and proportions of the Greek and Roman orders, of doors and windows, arches, staircases and balustrades, domes and vaults, roofs and spires, are set forth, and the best ways of drawing them explained. These lectures and exercises are supplemented by special courses on perspective, and on shades and shadows. At the same time a series of illustrated lectures is given upon Egyptian, Assyrian, Greek, and Roman architectural history, besides a course of reading on classic archeology and architecture from French and German text-books.

During the second year the students of architecture complete the course of elementary studies in mathematics, physics, and chemistry, following at the same time the work in hygiene and stone-cutting, given in the department of engineering.

Besides these lectures on hygiene in the second year, a special course on sanitary engineering is given to the students of architecture in the third and fourth years. This course covers, in the third year, the drainage of buildings, including the arrangement of pipes and fixtures, the disposal of household refuse, and the drainage of cellars and grounds. During the fourth year the

ventilation and warming of buildings is taken up, and discussed from both the practical and the scientific point of view.

In the third and fourth years the study of scientific construction is pursued in connection with the classes of engineering, most of the time, however, being given to strictly professional work. This is for the most part taken by the two classes in common, one class taking up in their fourth year what the next class takes in the third, and *vice versa*, the whole thus forming a single two-years' course.

These studies are arranged under four heads:

Under the head of history, the architecture of the middle ages is taken up in one year, and that of the renaissance and its more modern derivatives in the next. On completing the study of ancient architecture, then, in the second year, one class goes on directly to that of the middle ages in the third year, and to that of the renaissance in the fourth. The next class passes at once from ancient classical architecture to modern, finishing with the mediæval styles.

During the first half of the year the ground is covered by a course of lectures, and it is reviewed during the second half of the year, the class preparing a series of reports with illustrative drawings.

Under the general head of ornament, etc. is comprised the study of the decorative details of the different architectural styles, and of the contemporary forms in other branches of art, especially the decorative arts employed in building. The materials and processes employed in these arts, and the theory of æsthetics, in form and color, come under this head.

Under the head of architectural practice is classed the subject of specifications and working drawings, so far as they can profitably be studied in such a school, and of the materials and processes employed in building operations. It is proposed that a special architectural laboratory shall afford opportunity for the study and testing of oils and paints, cements, mortars and, other materials.

Under the head of drawing and design are comprised the practice in original composition afforded by the working out of problems in design, from given data, and general exercises in draughtsmanship, both free-hand and with the pencil, pen, or brush, illustrating the study of the special topics enumerated above.



The students give a certain proportion of time to exercises of a critical and literary character, designed to afford practice in both reading and writing.

### VACATION WORK

#### MEMOIRS

During the vacations following the close of each year, memoirs on subjects which will be assigned are required of students as follows: of students in the courses of analytical and applied chemistry, and of architecture, at the close of each year; of students in the course of geology and palæontology, at the close of the third year. The time specified for the completion and handing in of memoirs in chemistry is the first of November in each year; for other memoirs the time specified is the second Monday in October.

#### SUMMER SCHOOL IN MECHANICAL ENGINEERING

During the vacation at the end of the second year, a volunteer class in practical mechanical engineering is usually formed from among the students of either of the engineering courses who have completed their second year, for the purpose of visiting foundries and machine-shops in the city, and engaging in practical work and study. This class is under the immediate supervision of the adjunct professor of mechanical engineering, and is occupied in this way in the month of June.

#### SUMMER SCHOOL IN SURVEYING

During the latter part of the vacations, between the first and second years, and between the second and third years, students of the engineering, metallurgical and geological courses are required to attend the summer class in surveying for study of that subject, and to engage in practical surveying work in the field, under the direction of the adjunct professor of surveying and practical mining.

#### SUMMER SCHOOL IN PRACTICAL MINING

During the vacation at the end of the third year, a class in practical mining, composed of students in the course of mining engineering, and in the course of metallurgy, who have completed the third year, is required to visit mines for practical mine work. This class is under the immediate superintendence of the adjunct professor of surveying and practical mining, and is occupied in this way about six weeks.



## SUMMER SCHOOL IN PRACTICAL GEODESY

During the vacation at the end of the third year, a class in practical geodesy, composed of students in the course of civil engineering who have completed the third year, is required to make a geodetic survey of some region. This includes measuring a base line with a United States Coast Survey secondary base apparatus; secondary and tertiary triangulation with eight-inch theodolite; trigonometric levelling with eight-inch theodolite, with vertical circle; determinations of time and azimuth, using portable transit and theodolite; approximate determinations of time, latitude, and longitude, with sextant. The class is under the immediate supervision of the professor of geodesy and practical astronomy.

## SYNOPSIS OF STUDIES

## Undergraduate courses

## MINING ENGINEERING

*First year*

*First session*—Trigonometry and mensuration—Text-book: Davies' Legendre

Physics — doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat; sound; Lectures; Text-book: Atkinson's Ganot's physics

Botany — Lectures; Text-book: Bastin's College botany.

Chemistry — inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Qualitative analysis—Lectures; Text-book: Fresenius' Qualitative analysis

Blow-pipe analysis — qualitative; Lectures, conferences, and laboratory work; Text-book: Plattner's Blow-pipe analysis

Drawing — instrumental drawing, projections, intersections, developments; lettering; free-hand mechanical drawing, including plans, elevations and sections of models; Text-book: Binn's Orthographic projection

*Second session* — Geometrical conic sections — Text-book: Peck's Conic sections

Algebra — Text-book: Peck's Manual of algebra

Analytic geometry — Text-book: Peck's Analytical geometry

- Graphics — descriptive geometry ; Text-book : Church's Descriptive geometry
- Physics — magnetism ; electricity, static and dynamic, thermo-electricity, induction, magneto-electricity, the electric telegraph ; optics ; Lectures ; Text-book : Atkinson's Ganot's physics
- Botany — Lectures ; Text-book : Bastin's College botany
- Chemistry — inorganic ; Lectures and recitations ; Text-book : Fownes' Manual of chemistry
- Qualitative analysis — Lectures ; Text-book : Fresenius' Qualitative analysis
- Crystallography — Lectures, conferences ; Text-book : Egleston's Diagrams of crystals
- Drawing — topographical drawing ; use of water-colors in mechanical drawing ; tinting and grading ; problems in graphics
- Summer vacation* — Surveying — Lectures, recitations, and field work ; pacing ; compass and chain surveys ; topographical work ; use of solar compass in land and mineral surveys ; adjustments and use of transit and wye level for triangulation ; traversing, city surveying, and levelling ; use of plane table ; stratigraphic and magnetic surveys
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*Second year*

- First session* — Analytic geometry — Text-book : Peck's Analytical geometry
- Differential calculus — Text-book : Peck's Practical calculus
- Graphics — shades and shadows, perspective, isometrical drawing ; Text-book : Church's Shades and shadows
- Practical mining — excavation, quarrying, drilling and blasting, tunnelling
- Zoology — Lectures ; Text-book : Nicholson's Manual of zoology
- Hygiene — causes of disease, methods of investigation and of prevention, vital statistics ; Lectures and laboratory practice
- Applied chemistry — Lectures and recitations ; Text-book : Wagner's Chemische Technologie — air, water, artificial illumination, photography

Mineralogy — Lectures, conferences, and laboratory work ; Text-book : Eggleston's Lectures and tables of mineralogy

Drawing — tinting and grading ; problems in shades and shadows, and isometric ; scale-construction drawing

*Second session* — Differential and integral calculus — Text-books : Peck's Practical calculus

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Zoology — Lectures ; Text-book : Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics ; Lectures and laboratory practice

Applied chemistry — Lectures and recitations ; Text-book : Wagner's Chemische Technologie — limes, mortars, and cements ; building stones : decay and preservation ; timber and its preservation ; pigments, paints, essential oils, varnishes ; glass and ceramics ; explosives : gun-powder, gun-cotton, nitro-glycerine ; electro-metallurgy, etc.

Mineralogy — same as first session

Drawing — construction drawing ; mine maps ; mine sections, and problems in perspective

*Summer vacation* — Optional class in machine shops

Surveying — continued from first year

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### *Third year*

*First session* — Mechanics of solids, including forces, moments, equilibrium stability, etc., and elementary machines ; dynamics, including uniform, varied, rectilinear, and curvilinear motion, rotation, vibration, impact, work done, etc.

Physics — Mechanical theory of heat.

Engineering — General principles relating to materials and structures, physically and mechanically considered.

1 — Materials — stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses.

2 — Structures — earthwork, execution of earthwork, foundations and supports, superstructure ; joints ; stability, strength, and stiffness of parts ; special rules of construction for masonry of public buildings, bridges, retaining walls, arches, railroads, common roads, and canals.



3 — Mechanics of masonry — application of principles of mechanics to the stability of arches, retaining walls, buttresses, chimneys, reservoir walls, and dams.

Physical properties of materials — pig-iron: castings, chilled and malleable; wrought iron: bar, shapes, plate, tube, and wire; steel: ingot metal, castings, shapes, and plate; other metals and alloys.

Practical mining —

1 — Boring — earth augers, driven wells, boring with rods and cable tools; upward, inclined, and horizontal boring; diamond drill and its use in prospecting.

2 — Shaft sinking, shaft timbering and spiling, boring of shafts, sinking of iron and masonry linings, cribbing, walling, and tubbing.

3 — Drifting of adits and levels, timbering and walling in levels and working places.

4 — Mining of coal and ores, coal-cutting machines, hand and machine drilling.

5 — Handling of coal and ores in working places.

6 — Tramming, cars, tracks, locomotive and wire-rope haulage, planes and gravity roads.

7 — Accidents to miners, cause and prevention.

8 — Organization and administration.

9 — Time-books, measurement of contracts, pay-roll, analysis and dissection of accounts and cost sheets.

Assaying and ore testing. Lectures, recitations, and practical work.

Metallurgy — general metallurgy; fuel, furnaces, etc.

Geology, lithological — rocks and rock masses.

Drawing — general engineering construction; machine construction.

*Second session* — Mechanics of fluids, including pressure, buoyancy, and specific gravities, motion in pipes and channels, undulation, capillarity, tension and elasticity of gases, the atmosphere, the barometer, barometric formulæ, and hypsometry.

Physics — electricity; physical optics; and the undulatory theory of light (last two optional).

Engineering — theory of strains and strength of materials — elasticity, mechanical laws, application of principles of mechanics to beams, girders, and roof trusses under various conditions of loading and supports.



Physical properties of materials — continued from first session.

Practical mining — continued from first session.

Metallurgy — iron and steel.

Geology — historical, including paleontology, or a systematic review of recent and fossil forms of life.

Drawing — general engineering construction; machine construction.

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*Fourth year*

Mining engineering —

- 1 — Considered in its widest sense as a course of study.
- 2 — Considered in reference to the application of general principles of engineering to the development and working of mines.
- 3 — Classification and nomenclature of mineral deposits; descriptions of lodes or veins, beds, masses, and irregular deposits, with illustrations of the disturbances to which they are subjected, as affecting the work of mining.
- 4 — Graphic representation of deposits; with examples showing modes of occurrence and disturbances.
- 5 — Prospecting or searching for mineral deposits.
- 6 — Exploratory workings.
- 7 — Establishing seats of extraction.
- 8 — Description of typical methods of exploitation as applied to wide veins or lodes, to narrow veins, masses, to beds of various thicknesses and degrees of inclination.
- 9 — General principles relating to subterranean transportation.
- 10 — Methods and machinery employed for extracting minerals from the pits, and for facilitating ascent and descent of workmen.
- 11 — Drainage of mines; theory of infiltration of water, methods and machinery for draining or freeing mines from water.
- 12 — Ventilation of mines; causes of vitiation of the air of mines; quantities of fresh air required under various circumstances; natural ventilation; mechanical ventilation by fires and by ventilating machinery; distribution of air through galleries and workings.

13 — Graphic illustrations of exploratory workings; methods of exploitation; machinery for hoisting, pumping, ventilation, and transportation, including the use of steam-engines and pumps, air compressors, air engines, pumping engines, winding engines, centrifugal and other ventilating machines.

Engineering — theory of strains and strength of materials continued; graphical methods of determining strains, deflection of beams and girders; quantity of material in braced girders under various conditions of loading and supports; angle of economy for bracing; torsion of shafts; crushing and tensile strength of materials; working strains and working load; mode of estimating cost of girder work.

Hydraulic engineering — application of principles of mechanics of fluids to determining the discharge of water over weirs or dams; the dimensions of conduit pipes; discharge of canals and rivers; the effect of varying forms and sections of channels and of obstructions to flow; the gauging of streams; retaining walls for reservoirs.

Ore dressing —

1 — Introduction, theory of separation, hand and machine dressing, general principles governing crushing and sizing of ores of different character.

2 — Jigging — theory of, description of different forms of jigs and methods of working, air jigs.

3 — Slime treatment, classification of slimes in troughs, spitzenkasten, etc., and treatment on buddles and tables.

4 — Description of crushing machinery, jaw crushers, rolls, stamps, mills, etc.

5 — Sizing apparatus, screens, riddles, and trommels.

6 — Description of coal-washing plant; anthracite breaker.

7 — Description of American ore-dressing works.

8 — Foreign ore-dressing works.

Machinery and millwork — general theory of motion; uniform and varied motion; composition of motions; instantaneous centre and centroids; transmissions by rolling and sliding contact, by belting, ropes and chain, by shafting and linkages, by fluids; engaging and disengaging and reversing gears, and quick-return motions.

Dynamics of engineering — forces of nature employed or acting in all machines ; dynamic laws, mathematical theorems, measure of forces, work of forces ; elementary machines and their combinations ; theory of efficiency ; theory of fly-wheels, governors and brakes ; strength and proportions of parts of machines ; dynamometers ; prime movers, as driven by animal power, water power, steam power, compressed or heated air, wind power comprising the theory of animal power, theory of water-wheels, overshot wheels, undershot wheels, breast wheels, turbines, reaction wheels, centrifugal pumps ; properties and laws of heat as applied to the generation of steam and the construction of boilers ; properties of steam and air in their relation to prime movers ; mechanical theory of heat applied to steam-engines, hot-air engines, compressed-air engines ; general description of heat engines of various forms ; description and theory of ventilating fans or blowers.

Mechanical engineering —

- 1 — Steam-boilers : construction, wear and tear, fittings, setting, testing, care and management, firing, feeding, injectors, pumps, etc.
- 2 — Mechanism of engines — valve gearing, link motions, governors, etc.
- 3 — Management of engines — erecting, emergencies, special types of engines, etc.
- 4 — Proportions of engines, etc.
- 5 — Testing efficiency of engines and boilers, etc.
- 6 — Pumps, hoisting engines, ventilating machinery, construction and management of hot-air, gas, and petroleum engines, etc.
- 7 — Machine tools.

Graphic statics — general discussion of statics ; the method of the parallelogram of forces ; the method of the equation of moments ; the moment polygon method ; Culmann's principle, development of the principle, application to various problems, to beams, trusses, bridges, arches.

Surveying — railroad surveying : reconnoissance, location of line, calculation of cuttings and embankments.

Quantitative analysis.

Assaying and ore testing — practical work.

Metallurgy — copper, lead, silver, gold, zinc, tin, mercury, etc.



Economic geology — theory of mineral veins; ores, deposits, and distribution of iron, copper, lead, gold, silver, mercury, and other metals, graphite, coal, lignite, peat, asphalt, petroleum, salt, clay, limestone, cements, building and ornamental stone, etc.

Project in metallurgy, or thesis in mining engineering or economic geology.

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#### CIVIL ENGINEERING

##### *First year*

*First session* — Trigonometry and mensuration — Text-book: Davies' Legendre.

Physics — doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat; sound; Lectures; Text-book: Atkinson's Ganot's physics.

Botany — Lectures; Text-book: Bastin's College botany.

Chemistry — inorganic; Lectures and recitations; Fownes' Manual of chemistry.

Drawing — instrumental drawing; projections, intersections, and developments; lettering; free-hand mechanical drawing, including plans, elevations, and sections of models; Text-book: Binn's Orthographic projection.

*Second session* — Geometric conic sections — Text-book: Peck's Conic sections

Algebra — Text-book: Peck's Manual of algebra

Analytic geometry — Text-book: Peck's Analytical geometry

Graphics — descriptive geometry; Text-book: Church's Descriptive geometry

Physics — magnetism; electricity, static and dynamic, thermo-electricity, induction, magneto-electricity, the electric telegraph; optics; Lectures; Text-book: Atkinson's Ganot's physics

Botany — Lectures; Text-book: Bastin's College botany

Chemistry — inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Drawing — topographical drawing; use of water colors in mechanical drawing; tinting and grading; scale construction drawing; sketches from photographs and models; problems in graphics



*Summer vacation* — Surveying — Lectures, recitations, and field work; pacing; compass and chain surveys; topographical work; use of solar compass in land surveys; adjustments and use of transit and wye level for triangulation; traversing, city surveying and levelling; use of plane table; hydrographic surveys.

*Second year*

*First session* — Analytic geometry — Text-book: Peck's Analytical geometry

Differential calculus — Text-book: Peck's Practical calculus

Graphics — shades and shadows, perspective, isometrical drawing

Stereotomy — Text-book: Mahan's Stone-cutting

Engineering — roads and pavements; Text-book: Gillmore's Roads and pavements

Sanitary engineering — drainage of buildings and house-lots

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Zoology — Lectures; Text-book: Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations; Text-book: Wagner's Chemische Technologie — air, water, artificial illumination, photography

Blow-pipe analysis — qualitative; Lectures, conferences, and laboratory work

Crystallography — Lectures and conferences; Text-book: Eggleston's Diagrams of crystals

Drawing — problems in shades and shadows, and isometric; scale-construction drawing

*Second session* — Differential and integral calculus — Text-book: Peck's Practical calculus

Engineering — roads and pavements; Text-book: Gillmore's Roads and pavements

Sanitary engineering — drainage of buildings and house-lots

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Zoology — Lectures; Text-book: Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations ; Text-book : Wagner's *Chemische technologie* — limes, mortars, and cements ; building stones : decay and preservation ; timber and its preservation ; pigments, paints, essential oils, varnishes ; glass and ceramics ; explosives : gunpowder, guncotton, and nitroglycerine ; electro-metallurgy, etc.

Mineralogy — Lectures, conferences, and laboratory work on rock-forming minerals, common ores, and minerals used in the manufacture of cements, paints, etc.

Drawing — problems in perspective, and map construction ; construction drawing ; stone-cutting

*Summer vacation* — Optional class in machine shops.

Surveying — continued from first year.

### *Third year*

*First session* — Mechanics of solids, including forces, moments, equilibrium, stability, etc., and elementary machines ; dynamics, including uniform, varied, rectilinear, and curvilinear motion, rotation, vibration, impact, work done, etc.

Physics — mechanical theory of heat

Practical astronomy and general principles of geodesy

Engineering — general principles relating to materials and structures, physically and mechanically considered

1 — Materials — stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses

2 — Structures — earthwork, execution of earthwork, foundations and supports, superstructure ; joints ; strength, and stiffness of parts ; special rules of construction for masonry of public buildings, bridges, retaining walls, arches, railroads, common roads, and canals

3 — Mechanics of masonry — application of principles of mechanics to the stability of arches, retaining walls, buttresses, chimneys, reservoir walls, and dams

Physical properties of materials — pig-iron : castings, chilled and malleable ; wrought iron : bar, shapes, plate, tube, and wire ; steel : ingot metal, castings, shapes, and plate ; other metals and alloys

Metallurgy — general metallurgy ; fuels, furnaces, etc.

Geology — lithological, cosmical, and physiographic

Drawing—general engineering construction ; machine construction

*Second session* — Mechanics of fluids, including pressure, buoyancy, and specific gravities, motion in pipes and channels, undulation, capillarity, tension and elasticity of gases, the atmosphere, the barometer, barometric formulæ, and hypsometry

Physics — electricity (required) ; physical optics, and the undulatory theory of light (optional)

Practical astronomy and general principles of geodesy

Engineering — theory of strains and strength of materials — elasticity, mechanical laws, application of principles of mechanism to beams, girders, and roof trusses under various conditions of loading and supports

Physical properties of materials — continued from first session

Metallurgy — iron and steel

Geology — historical, including paleontology

Drawing—general engineering construction ; machine construction

#### *Fourth year*

Civil engineering — hydraulic and sanitary engineering, embracing water supply for cities and towns, for the purposes of irrigation and improvement of lands ; quantity and quality of water required ; rainfall, flow of streams, storage of water, capacity of water-sheds, impurities of water ; practical construction of water-works, pumping machinery ; clarification of water ; systems of water supply.

Works of sewerage — rainfall and sewers ; influence of geological and topographical features of the sites of towns and districts ; discharge of sewers : intercepting sewers, forms, modes of construction, and materials used ; flushing of sewers and ventilation ; traps, outfalls, tide valves ; subsoil and surface drainage of towns ; house drainage ; water-closets ; ventilation of houses in connection with sanitary measures.

Improvements of rivers and harbors — action of tides and currents in forming and removing deposits ; methods of protecting and deepening harbors and channels.

Engineering — theory of strains and strength of materials continued — graphical methods of determining strains ; deflec-



tion of beams and girders; quantity of material in braced girders under various conditions of loading and supports; angle of economy for bracing; torsion of shafts; crushing and tensile strength of materials, working strains and working load; mode of estimating cost of girder work.

**Hydraulic engineering** — application of principles of mechanics of fluids to determining the discharge of water over weirs or dams; the dimensions of conduit pipes; discharge of canals and rivers; the effects of varying forms and sections of channels and of obstructions to flow; the gauging of streams; retaining walls for reservoirs.

**Machinery and millwork**—1 General theory of motion; 2 Uniform and varied motion; 3 Composition of motions; 4 Instantaneous centre and centroids; 5 Transmissions by rolling and sliding contact, by belting, ropes and chains, by shafting and linkages, by fluids; 6 Engaging gears, reversing and quick-return motions.

**Dynamics of engineering** — forces of nature employed or acting in all machines; dynamical laws, mathematical theorems, measures of forces, work of forces; elementary machines and their combinations; theory of efficiency; theory of fly-wheels, governors and brakes; strength and proportions of parts of machines; dynamometers; prime movers as driven by animal power, water power, steam power, compressed or heated air, wind power, comprising the theory of animal power, theory of water-wheels, overshot wheels, undershot wheels, breast wheels, turbines, reaction wheels, centrifugal pumps; properties and laws of heat as applied to the generation of steam in steam-boilers; properties of steam and air in their relation to prime movers; mechanical theory of heat, applied to steam-engines, hot-air engines, compressed-air engines; general description of heat engines of various forms; description and theory of ventilating fans or blowers.

**Mechanical engineering** — 1 Steam-boilers: construction, wear and tear, fittings, setting, testing, care and management, firing, feeding, injectors, pumps, etc.; 2 Mechanism of engines: valve gearing, link motions, governors, etc.; 3 Management of engines: erecting, emergencies, special types of engines, etc.; 4 Proportions of engines, etc.; 5 Testing efficiency of engines and boilers; 6 Pumps, hoisting engines,



ventilating machinery; 7 Construction and management of hot-air, gas, and petroleum engines, etc.; 8 Machine tools.

Graphic statics — general discussion of statics; the method of the parallelogram of forces; the method of the equation of moments; the moment polygon method; Culmann's principle, development of the principle, application to various problems, to beams, to trusses, to bridges, to arches.

Engineering design — the laws and theory of design, materials used and their nature, sizes and kinds kept "in stock," adaptation to various purposes; laws of dimensioning; comparison of column formulæ; working stresses; designing of connections, in wood, riveted, pin-connections; study of types of design, roof trusses of wood and iron, cranes, trestles, bridges; specification bills of material, shipping bills, etc.

Railroad engineering — the locomotive engine construction and design of various types; limitation of alignment by the motive power and operating expenses; economic location; specifications for construction; maintenance of way; switches and signals; operating systems; administration; rolling stock, etc.

Principles of sanitary engineering as regards necessity of sanitary measures, different systems of removing refuse and decomposing matters, warming and ventilation.

Geodesy continued, with lectures on figure of the earth, astronomical determinations of time, latitude, longitude, and azimuth of a direction.

Surveying — railroad surveying: reconnoissance, location and survey of line with curves in the field; calculation of cuttings and embankments; general nature of railroad construction; grading; item sheets and reports; culverts: box, arch, etc.; foundation pits; drainage; location of bridge piers.

Drawing — problems in graphical statics; making of stress sheets for various roof and bridge trusses and arches; making of engineering designs for roofs, cranes, bridges, etc., including dimensioning; making of working drawings; bills of materials, etc.

Project

#### METALLURGY

##### *First year*

*First session*—Trigonometry and mensuration—Text-book: Davies' Legendre

Physics—doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat; sound; Lectures; Text-book: Atkinson's Ganot's physics

Botany—Lectures; Text-book: Bastin's College botany

Chemistry—inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Qualitative analysis—Lectures; Text-book: Fresenius' Qualitative analysis

Blow-pipe analysis—qualitative; Lectures, conferences, and laboratory work; Text-book: Plattner's Blow-pipe analysis

Drawing—instrumental drawing; projections, intersections, developments; lettering; free-hand mechanical drawing, including plans, elevations, and sections of models. Text-book: Binn's Orthographic projection

*Second session*—Geometric conic sections—Text-book: Peck's Conic sections

Algebra—Text-book: Peck's Manual of algebra

Analytic geometry—Text-book: Peck's Analytical geometry

Graphics—descriptive geometry; Text-book: Church's Descriptive geometry

Physics—magnetism; electricity, static and dynamic, thermo electricity, induction, magneto-electricity, the electric telegraph; optics; Lectures; Text-book: Atkinson's Ganot's physics

Botany—Lectures; Text-book: Bastin's College botany

Chemistry—inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Qualitative analysis—Lectures; Text-book: Fresenius' Qualitative analysis

Crystallography—Lectures, conferences; Text-book: Egleston's Diagrams of crystals

Drawing—topographical drawing; use of water colors in mechanical drawing; tinting and grading; problems in graphics

*Summer vacation*—Surveying—Lectures, recitations, and field work; pacing; compass and chain surveys; topographical work; use of solar compass in land and mineral surveys;

adjustments and use of transit and wye level for triangulation; traversing, city surveying, and levelling; use of plane table; stratigraphical and magnetic surveys.

*Second year*

*First session* — Analytic geometry — Text-book: Peck's Analytical geometry

Differential calculus — Text-book: Peck's Practical calculus

Graphics — shades and shadows, perspective, isometrical drawing

Stereotomy — Text-book; Mahan's Stone-cutting

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Zoology — Lectures; Text-book: Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations; Text-book: Wagner's Chemische Technologie — air, water, artificial illumination, photography

Quantitative analysis — Lectures; Text-book: Cairns' Quantitative analysis

Mineralogy — Lectures, conferences, and laboratory work; Text-book: Eggleston's Lectures and tables of mineralogy

Drawing — construction drawing; problems in shades and shadows, and isometric

*Second session* — Differential and integral calculus — Text-book: Peck's Practical calculus

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Zoology — Lectures; Text-book: Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations; Text-book: Wagner's Chemische Technologie — limes, mortars, and cements; building stones: decay and preservation; timber and its preservation; pigments, paints, essential oils, varnishes; glass and ceramics; explosives; gunpowder, gun-cotton, nitro-glycerine; electro-metallurgy, etc.

Quantitative analysis — Lectures; Text-book: Cairns' Quantitative analysis



Mineralogy — same as first session

Drawing — construction drawing: plans of mill buildings, furnaces, etc.; problems in perspective

*Summer vacation* — Optional class in machine shops

Surveying — continued from first year

### *Third year*

*First session* — Mechanics of solids, including forces, moments, equilibrium, stability, etc., and elementary machines; dynamics, including uniform, varied, rectilineal, and curvilinear motion, rotation, vibration, impact, work done, etc.

Physics — mechanical theory of heat

Engineering — general principles relating to materials and structures, physically and mechanically considered

1 — Materials — stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality and fitness for special uses

2 — Structures — earthwork, execution of earthwork, foundations and supports, superstructure; joints; stability, strength, and stiffness of parts; special rules of construction for masonry and public buildings, bridges, retaining walls, arches, railroads, common roads and canals

3 — Mechanics of masonry — application of principles of mechanics to the stability of arches, retaining walls, buttresses, chimneys, reservoir walls and dams

Physical properties of materials — pig-iron: castings, chilled and malleable; wrought-iron: bar, shapes, plate, tube, and wire; steel: ingot metal, castings, shapes and plate; other metals and alloys

Practical mining —

1 Boring — earth augurs, driven wells, boring with rods and cable tools; upward, inclined, and horizontal boring; diamond drill and its use in prospecting; 2 shaft sinking, shaft timbering, and spiling, boring of shafts, sinking of iron and masonry linings, cribbing, walling, and tubbing; 3 drifting of adits and levels, timbering and walling in levels and working places; 4 mining of coal and ores, coal-cutting machines, hand and machine



drilling ; 5 handling of coal and ores in working places ; 6 tramping, cars, tracks, locomotive and wire-rope haulage, planes and gravity roads ; 7 accidents to miners, cause and prevention ; 8 organization and administration ; 9 time-books, measurement of contracts, pay-roll, analysis and dissection of accounts and cost sheets

**Quantitative analysis**

**Metallurgy** — general metallurgy, fuels, furnaces, etc.

**Geology** — lithological, rocks and rock masses

**Drawing** — constructions ; machines, furnaces, plans, etc.

*Second session* — Mechanics of fluids, including pressure, buoyancy, and specific gravities, motion in pipes and channels, undulation, capillarity, tension and elasticity of gases, the atmosphere, the barometer, barometric formulæ and hypsometry

**Physics** — electricity ; physical optics ; and the undulatory theory of light (last two optional)

**Engineering** — theory of strains and strength of materials — elasticity, mechanical laws, application of principles of mechanics to beams, girders, and roof trusses under various conditions of loading and supports

**Physical properties of materials** — continued from first session

**Practical mining** — continued from first session

**Assaying and ore testing** — lectures, recitations, and practical work ; sampling and testing large and small lots of ores, slags, mattes, alloys, amalgams, etc. ; special practice on lead, antimony, gold, silver, and copper ores

**Metallurgy** — iron and steel

**Geology** — historical, including paleontology

**Drawing** — constructions ; machines, furnaces, plans, etc.

*Fourth year*

**Mining engineering** —

1 — Considered in its widest sense as a course of study

2 — Considered in reference to the application of general principles of engineering to the development and working of mines

- 3 — Classification and nomenclature of mineral deposits; descriptions of lodes or veins, beds, masses, and irregular deposits, with illustrations of the disturbances to which they are subjected, as affecting the work of mining
- 4 — Graphical representations of deposits, with examples showing modes of occurrence and disturbances
- 5 — Prospecting or searching for mineral deposits
- 6 — Exploratory workings
- 7 — Establishing seats of extraction
- 8 — Description of typical methods of exploitation as applied to wide veins or lodes, to narrow veins, masses, to beds of various thicknesses and degrees of inclination
- 9 — General principles relating to subterranean transportation
- 10 — Methods and machinery employed for extracting minerals from the pits, and for facilitating ascent and descent of workmen
- 11 — Drainage of mines; theory of infiltrations of water, methods and machinery for draining or freeing mines from water
- 12 — Ventilation of mines; causes of vitiation of the air of mines; quantities of fresh air required under various circumstances; natural ventilation; mechanical ventilation by fires and by ventilating machinery; distribution of air through galleries and workings
- 13 — Graphic illustration of exploratory workings; methods of exploitation; machinery for hoisting, pumping, ventilation, and transportation, including the use of steam-engines and pumps, air compressors, air engines, pumping engines, winding engines, centrifugal and other ventilating machines

Engineering — theory of strains and strength of materials continued — graphical methods of determining strains; deflection of beams and girders; quantity of material in braced girders under various conditions of loading and supports; angle of economy for bracing; torsion of shafts; crushing and tensile strength of materials; working strains and working load; mode of estimating cost of girder work

**Hydraulic engineering** — application of principles of mechanics of fluids to determining the discharge of water over weirs or dams; the dimensions of conduit pipes; discharge of canals and rivers; the effect of varying forms and sections of channels and of obstructions to flow; the gauging of streams; retaining walls for reservoirs

**Dynamics of engineering** — forces of nature employed or acting in all machines; dynamical laws, mathematical theorems, measure of forces, work of forces; elementary machines and their combinations; theory of efficiency; theory of fly-wheels, governors and brakes; strength and proportions of parts of machines; dynamometers; prime movers, as driven by animal powers, water power, steam power, compressed or heated air, wind power, comprising the theory of animal power, theory of water-wheels, overshot wheels, undershot wheels, breast wheels, turbines, reaction wheels, centrifugal pumps; properties and laws of heat as applied to the generation of steam and the construction of boilers; properties of steam and air in their relation to prime movers; mechanical theory of heat applied to steam-engines; hot-air engines, compressed-air engines; general description of heat engines of various forms; description and theory of ventilating fans or blowers

**Ore dressing** —

- 1 — Introduction, theory of separation, hand and machine dressing, general principles governing crushing and sizing of ores of different character
- 2 — Jigging — theory of, description of different forms of jigs and methods of working, air jigs
- 3 — Slime treatment, classifications of slimes in troughs, spitz kasten, etc., and treatment on buddles and tables
- 4 — Description of crushing machinery, jaw crushers, rolls, stamps, mills, etc.
- 5 — Sizing apparatus, screens, riddles, and trommels
- 6 — Description of coal-washing plant; anthracite breaker
- 7 — Description of American ore-dressing works
- 8 — Foreign ore-dressing works

**Mechanical engineering** —

- 1 — Steam-boilers: construction, wear and tear, fittings, settings, testing, care and management, firing, feeding, injectors, pumps, etc.

- 2 — Mechanism of engines: valve gearing, link motions, governors, etc.
- 3 — Management of engines: erecting, emergencies, special types of engines, etc.
- 4 — Proportions of engines, etc.
- 5 — Testing efficiency of engines and boilers, etc.
- 6 — Pumps, hoisting engines, ventilating machinery; construction and management of hot-air, gas, and petroleum engines, etc.
- 7 — Machine tools

Graphic statics — general discussion of statics; the method of the parallelogram of forces; the method of the equation of moments; the moment polygon method; Culmann's principle, development of the principle, application to various problems, to beams, trusses, bridges, arches

Assaying and ore testing — practical work

Metallurgy — copper, lead, silver, gold, zinc, mercury, tin, etc.

Economic geology — theory of mineral veins, ores, deposits, and distribution of iron, copper, lead, gold, silver, mercury, and other metals; graphite, coal, lignite, peat, asphalt, petroleum, salt, clay, limestone, cements, building and ornamental stones, etc.

Drawing — project and thesis work

Project

#### GEOLOGY AND PALEONTOLOGY

##### *First year*

*First session* — Trigonometry and mensuration — Text-book: Davies' Legendre

Physics — doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat; sound; Lectures; Text-book: Atkinson's Ganot's physics

Botany — Lectures; Text-book: Bastin's College botany

Chemistry — inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Qualitative analysis — Lectures; Text-book: Fresenius' qualitative analysis

Blowpipe analysis — qualitative; Lectures, conferences, and laboratory work; Text-book: Plattner's Blow-pipe analysis



Drawing — instrumental drawing ; projections, intersections, developments ; lettering ; free-hand mechanical drawing, including plans, elevations and sections of models ; Text-book : Binn's Orthographic projection

*Second session* — Geometric conic sections — Text-book : Peck's Conic sections

Algebra — Text-book : Peck's Manual of algebra

Analytic Geometry — Text-book : Peck's Analytical Geometry

Graphics — descriptive geometry ; Text-book : Church's Descriptive geometry

Physics — magnetism ; electricity, static and dynamic, thermoelectricity, induction, magneto-electricity, the electric telegraph ; optics ; Lectures ; Text-book : Atkinson's Ganot's physics

Botany — Lectures ; Text-book : Bastin's College botany

Chemistry — inorganic ; Lectures and recitations ; Text-book : Fownes' Manual of chemistry

Qualitative analysis — Lectures ; Text-book : Fresenius' Qualitative analysis

Crystallography — Lectures, conferences ; Text-book : Egleston's Diagrams of crystals

Drawing — topographical drawing, use of water colors in mechanical drawing, tinting and grading, problems in graphics

*Summer vacation* — Surveying — Lectures, recitations, and field work ; pacing ; compass and chain surveys ; topographic work ; use of solar compass in land and mineral surveys ; adjustments and use of transit and wye level for triangulation ; traversing, city surveying, and levelling ; use of plane table ; stratigraphic and magnetic surveys

### *Second year*

*First session* — Graphics — shades and shadows, perspective and isometrical drawing

Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Botany — histology

Zoology — histology ; Lectures ; Text-book : Nicholson's Manual of zoology

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations; Text-book: Wagner's *Chemische Technologie* — air, water, artificial illumination, photography

Mineralogy — Lectures, conferences, and laboratory work; Text-book: Egleston's *Lectures and tables of mineralogy*

The microscope and its practical applications; Lectures and laboratory practice

Drawing — sketches of geological outcrops, fossils, etc.; problems in shades and shadows, and isometric

*Second session* — Practical mining — excavation, quarrying, drilling and blasting, tunnelling

Botany — protophyta, thallophyta, bryophyta

Zoology — Lectures and practical study of protozoa, recent and fossil; Text-book: Nicholson's *Manual of zoology*

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics; Lectures and laboratory practice

Applied chemistry — Lectures and recitations; Text-book: Wagner's *Chemische Technologie* — limes, mortars, and cements; building stones: decay and preservation; timber and its preservation; pigments, paints, essential oils, varnishes; glass and ceramics; explosives: gunpowder, gun-cotton, nitro-glycerine; electro-metallurgy, etc.

Mineralogy — same as first session

The microscope and its practical applications; Lectures and laboratory practice

Drawing — geological sections, plain and colored; fossil drawing, and problems in perspective

*Summer vacation* — Surveying — continued from first year

### *Third year*

*First session* — Physics — mechanical theory of heat

Paleontology

Botany — pteridophyta, phanerogamia

Zoology — radiata, recent and fossil

Lithology

### Practical mining —

- 1—Boring — earth augers, driven wells, boring with rods and cable tools: upward, inclined, and horizontal boring; diamond drill and its use in prospecting
- 2—Shaft sinking, shaft timbering and spiling, boring of shafts, sinking of iron and masonry linings, cribbing, walling, and tubbing
- 3—Drifting of adits and levels, timbering and walling in levels and working places
- 4—Mining of coal and ores, coal-cutting machines, hand and machine drilling
- 5—Handling of coal and ores in working places
- 6—Tramming, cars, tracks, locomotive and wire-rope haulage, planes and gravity roads
- 7—Accidents to miners, cause and prevention
- 8—Organization and administration
- 9—Time-books, measurement of contracts, pay-roll, analysis and dissection of accounts and cost sheets

Assaying and ore testing — Lectures, recitations, and practical work

Metallurgy — general metallurgy, fuels, furnaces, etc.

Geology — lithological, cosmical, physiographic

Biology — Lectures and laboratory practice

Drawing — geological drawings

*Second session* — Physics — electricity; physical optics; and the undulatory theory of light (last two optional)

Paleontology

Botany

Zoology — mollusca, recent and fossil

Lithology

Practical mining — continued from first session

Metallurgy — iron and steel

Geology — historical, including paleontology

Biology — Lectures and laboratory practice

Drawing — geological drawings

### *Fourth year*

Paleontology

Botany — economic

Zoology — articulata and vertebrata, recent and fossil

Lithology — microscopic

Ore dressing

Surveying — railroad surveying, reconnoissance, location of line, calculations of cuttings and embankments

Quantitative analysis

Metallurgy — copper, lead, silver, gold, zinc, tin, mercury, etc.

Economic geology — theory of mineral veins, ores, deposits and distribution of iron, copper, lead, gold, silver, mercury, and other metals; graphite, coal, lignite, peat, asphalt, petroleum, salt, clay, limestone, cements, building and ornamental stones, etc.; economic mineralogy

Drawing — dissertation and thesis work

Thesis

#### ANALYTIC AND APPLIED CHEMISTRY

##### *First year*

*First session* — Trigonometry and mensuration — Text-book: Davies' Legendre

Physics — doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat; sound; Lectures; Text-book: Atkinson's Ganot's physics

Botany — Lectures; Text-book: Bastin's College botany

Chemistry — inorganic; Lectures and recitations; Text-book: Fownes' Manual of chemistry

Qualitative analysis — Lectures; Text-book: Fresenius' Qualitative analysis

Blow-pipe analysis — qualitative; Lectures, conferences, and laboratory work; Text-book: Plattner's Blow-pipe analysis

Drawing — instrumental drawing; projections, intersections, and developments; lettering; Text-book: Binn's Orthographic projection

*Second session* — Geometric conic sections — Text-book: Peck's Conic sections

Algebra — Text-book: Peck's Manual of algebra

Analytic Geometry — Text-book: Peck's Analytical geometry

Physics — magnetism; electricity, static and dynamic, thermoelectricity, induction, magneto-electricity, the electric telegraph; optics; Lectures; Text-book: Atkinson's Ganot's physics



Botany — Lectures ; Text-book : Bastin's College botany  
 Chemistry — inorganic ; Lectures and recitations ; Text-book :  
     Fownes' Manual of chemistry  
 Chemical physics — Lectures and recitations ; Text-book : Cooke's  
     Chemical physics  
 Qualitative analysis — Lectures ; Text-book : Fresenius' Qualita-  
     tive analysis  
 Crystallography — Lectures, conferences ; Text-book : Egleston's  
     Diagrams of crystals  
 Drawing — same as first session

*Second year*

*First session* — Zoology — Lectures ; Text-book : Nicholson's  
     Manual of zoology  
 Hygiene — causes of disease, methods of investigation and of pre-  
     vention, vital statistics ; Lectures, and laboratory practice  
 Applied chemistry — Lectures and recitations ; Text-book : Wag-  
     ner's Chemische Technologie — air, water, artificial illumina-  
     tion, photography  
 Chemical philosophy — Lectures and recitations ; Text-book :  
     Cooke's Chemical philosophy  
 Quantitative analysis — Lectures ; Text-book : Cairns' Quantita-  
     tive analysis  
 Mineralogy — Lectures, conferences, laboratory work ; Text-book :  
     Egleston's Lectures and tables of mineralogy  
 The microscope and its practical applications ; Lectures and  
     laboratory practice

*Second session* — Zoology — Lectures ; Text-book : Nicholson's  
     Manual of zoology  
 Hygiene — causes of disease, methods of investigation and of  
     prevention, vital statistics ; Lectures and laboratory practice  
 Applied chemistry — Lectures and recitations ; Text-book : Wag-  
     ner's Chemische Technologie — limes, mortars, and cements ;  
     building stones : decay and preservation ; timber and its  
     preservation ; pigments, paints, essential oils, varnishes ;  
     glass and ceramics ; explosives : gun powder, gun-cotton,  
     nitro-glycerine ; electro-metallurgy, etc.  
 Chemical philosophy — Lectures and recitations ; Text-book :  
     Cooke's Chemical philosophy

Quantitative analysis — Lectures; Text-book: Cairns' Quantitative analysis

Mineralogy — same as first session

The microscope and its practical applications; Lectures and laboratory practice

*Third year*

*First session* — Physics — mechanical theory of heat

Applied chemistry — Lectures and recitations; Text-book: Wagner's *Chemische Technologie*

Chemical manufactures: acids, alkalies, and salts. (1) Sulphur, sulphurous acid, hyposulphites, sulphuric acid, bisulphide of carbon, etc. (2) Common salt, soda ash, hydrochloric acid, chlorine, binoxide of manganese, bleaching powder, chlorates, chlorimetry, etc. (3) Carbonate of potash, caustic potash, alkalimetry, acidimetry, etc. (4) Nitric acid and nitrates. (5) Iodine, bromine, etc. (6) Sodium, aluminium, magnesium. (7) Phosphorus, matches, etc. (8) Ammonia salts. (9) Cyanides. (10) Alum, copperas, blue vitrol, salts of magnesia, baryta, strontia, etc. (11) Borates, stannates, tungstates, chromates, etc. (12) Salts of mercury and silver. (13) Oils, fats, soaps, glycerine

Quantitative analysis

Metallurgy — general metallurgy, fuels, furnaces, etc.

Geology — lithologic, cosmic, and physiographic

Biology — Lectures and laboratory practice

Drawing — construction drawing, including plans, elevations, and sections; use of water colors in mechanical drawing; tinting and grading; free-hand sketches from photographs and models

*Second session* — Physics — electricity; physical optics; and the undulatory theory of light (last two optional)

Applied chemistry — Lectures and recitations; Text-book: Wagner's *Chemische Technologie*

Food and drink: milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food, tobacco, etc.

Assaying — Lectures, recitations, and practical work; ores of lead, antimony, tin, bismuth, copper, nickel, iron, mercury, gold, and silver; alloys of lead, gold, and silver

Metallurgy — iron and steel

Geology — historical, including paleontology

Biology — Lectures and laboratory practice

*Fourth year*

Organic chemistry — Lectures and laboratory practice

Applied chemistry — Lectures and recitations ; Text-book : Wagner's *Chemische Technologie*

Clothing : textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india-rubber, gutta-percha, etc.

Fertilizers : guano, superphosphates, poudrettes, etc.

Metallurgy — copper, lead, silver, gold, zinc, tin, mercury, etc.

Economic geology — theory of mineral veins ; ores ; deposits and distribution of iron, copper, lead, gold, silver, mercury and other metals ; graphite, coal, lignite, peat, asphalt, petroleum, salt, clay, limestone, cements, building and ornamental stones, etc.

Thesis

ARCHITECTURE

*First year*

*First session*—Trigonometry and mensuration—Text-book : Davies' *Legendre*

Graphics — projections, intersections, and developments

Physics — doctrines of heat, viz., expansion, conduction, radiation, thermometry, latent heat, tension of vapors, steam, specific heat ; sound ; Lectures ; Text-book : Atkinson's *Ganot's physics*

Architectural history — Text-book : Collignon's *Archéologie Grecque*

Botany — Lectures ; Text-book : Bastin's *College botany*

Chemistry — inorganic ; Lectures and recitations ; Text-book : Fownes' *Manual of chemistry*

Drawing—free-hand and sketching in outline ; tracing ; lettering ; instrumental drawing

*Second session* — Geometric conic sections — Text-book : Peck's *Conic sections*

Algebra — Text-book : Peck's *Manual of algebra*

Analytic geometry — Text-book : Peck's *Analytical geometry*

Graphics—shades and shadows ; descriptive geometry ; problems



Physics — magnetism ; electricity, static and dynamic, thermo-electricity, induction, magneto-electricity, the electric-telegraph ; optics ; Lectures ; Text-book : Atkinson's Ganot's physics

Architectural history — Text-book : Collignon's Archéologie Grecque

Botany — Lectures ; Text-book : Bastin's College botany

Chemistry — inorganic ; Lectures and recitations ; Text-book : Fownes' Manual of chemistry

Drawing — free hand ; outline and shaded from the flat ; brush work ; plans and elevations ; ornament ; shades and shadows ; perspective

*Second year*

*First session* — Analytic geometry — Text-book : Peck's Analytical geometry

Differential calculus — Text-book : Peck's Practical calculus

Graphics — perspective ; problems

Stereotomy — Text-book : Mahan's Stone-cutting

The elements of architecture — the forms and proportions of the five orders, and of balustrades, steps, doors, windows, arches, vaults, domes, roofs, spires, etc.

Ancient architectural history — Text-books : Reber's History of ancient art, Kroker's Katechismus der Archæologie

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics ; Lectures and laboratory practice

Applied chemistry — Lectures and recitations ; Text-book : Wagner's Chemische Technologie — air, water, artificial illumination, photography

Drawing and tracing — free-hand and instrumental ; ornament from casts ; plans, sections, and elevations

*Second session* — Differential and integral calculus — Text-book : Peck's Practical calculus

The elements of architecture — continued

Ancient architectural history — continued

Hygiene — causes of disease, methods of investigation and of prevention, vital statistics ; Lectures and laboratory practice

Applied chemistry — Lectures and recitations ; Text-book : Wagner's Chemische Technologie — limes, mortars, and cements ; building stones : decay and preservation ; timber and its



preservation ; pigments, paints, oils, and varnishes ; glass and ceramics ; explosives: gun powder, gun-cotton, nitro-glycerine ; electro-metallurgy, etc.

Drawing — ornament from casts ; details ; perspective drawings

### *Third year*

*First session* — Mechanics of solids, including forces, moments, equilibrium, stability, etc., and elementary machines

Engineering — general principles relating to materials and structures, physically and mechanically considered

1 — Materials — stone, cement, brick, metal, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses

2 — Structures — earthwork, execution of earthwork, foundations and supports, superstructure ; joists ; stability, strength, and stiffness of parts ; special rules of construction for masonry of public buildings, bridges, retaining walls, arches

3 — Mechanics of masonry — application of principles of mechanics to the stability of arches, retaining walls, buttresses, chimneys, reservoir walls, and dams

Sanitary engineering — drainage of buildings and house lots

<sup>1</sup> Mediæval architectural history

<sup>1</sup> The history of ornament, ancient and oriental ; Lectures and exercises ; reports

<sup>1</sup> The theory of architecture — the theory of form, conventionalism

<sup>1</sup> Specifications and working drawings — excavations, foundations, piling, stonework, brickwork, plastering, and stucco-work ; Lectures ; shop work

Architectural design — design by dictation ; problems

Geology — descriptive

Drawing from the cast — ornament and the human figure

*Second session* — Mechanics of fluids, including pressure, buoyancy, and specific gravities, tension and elasticity of gases, the atmosphere, the barometer, and barometric formulæ

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<sup>1</sup> For convenience these subjects are given in alternate years, the third and fourth year students taking them together. In 1889-90 both classes take the work here set down for the fourth year: in 1890-91, that set down for the third year.

Engineering — theory of strains and strength of materials — elasticity, mechanical laws, application of principles of mechanics to beams, girders, and roof trusses under various conditions of loading and supports

Sanitary engineering — drainage of buildings and house lots

Mediæval architectural history

<sup>1</sup>The history of ornament — continued

<sup>1</sup>The decorative arts — stained glass, pottery, etc. ; Lectures

<sup>1</sup>Business relations ; office papers ; competitions ; legal obligations ; superintendence ; Lectures ; shop work

Architectural design — alterations and restorations ; problems

Geology — historic

Drawing — historic examples

#### *Fourth year*

Civil engineering — theory of strains and strength of materials continued — graphical methods of determining strains ; deflection of beams and girders ; quantity of material in braced girders under various conditions of loading and supports ; angle of economy for bracing ; torsion of shafts ; crushing and tensile strength of materials ; working strains and working load ; mode of estimating cost of girder work

Graphical statics

Engineering design

Sanitary engineering — ventilation and warming of buildings ; sewerage

<sup>1</sup>Specifications and working drawings — carpentry, painting, glazing, plumbing ; iron, lead, and copper work ; tinning and slating ; Lectures, and shop work

<sup>1</sup>Estimates — quantity, weight, time, labor, cost ; squaring

<sup>1</sup>Modern architectural history

<sup>1</sup>The history of painting and sculpture

<sup>1</sup>The decorative arts — mosaic, fresco, metal works, inlays ; Lectures

<sup>1</sup>The theory of architecture — theory of color, theory of composition

<sup>1</sup>The history of ornament, mediæval and modern ; Lectures and exercises ; reports

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<sup>1</sup>For convenience these subjects are given in alternate years, the third and fourth year students taking them together.

Economic geology — clay, limestones, cements, building and ornamental stones

Architectural design — problems

Drawing — the figure; architectural subjects from the east and from historical examples

Project

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### Graduate courses

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#### ELECTRICAL ENGINEERING

The full course for the degree of electrical engineer occupies two years.

##### *First year*

General principles of electricity — static electricity, magnetism, dynamic electricity, electro-magnetism, thermo-electricity, heating, lighting and mechanical effects of electricity, induction, etc.

Mathematical theory of electricity — theory of static and dynamic electricity, magnetism, and electro-magnetism

Theory of electrical measurements — electrical laws, electrical units and their determination, theory of electrical measuring instruments and methods of measurement

Practical laboratory work — electrical measurements and tests

Practice of the dynamo and electric motor — construction, operation, regulation, and testing

Theory of the dynamo and electric motor — continuous-current machines

Electric lamps, arc and incandescent

Telegraph, single needle, Morse, duplex, and printing

Telephone transmitters and receivers

Electric batteries, primary and secondary

Workshop practice in the actual making of electrical apparatus

Drawing, diagrams of circuits, sketches and working drawings of electrical apparatus

##### *Second year*

Electrical lighting — design and installation of plants, regulating apparatus, safety devices, wiring, overhead and underground conductors, managing and testing of stations, laws and regulations relating to electric lighting



Electric power — generation, transmission, and distribution of electric power, electric railways, electric hoisting, pumping, and ventilating apparatus

Electric telegraph — quadruplex, multiplex, autographic, and submarine; dynamos in telegraphy

Electrical methods and apparatus used in the extraction, purification, and deposition of metals and in electric welding

Theory of primary and secondary batteries

Theory of the dynamo and electric motor — alternate-current machines

Mathematical theory of electricity — theory of<sup>a</sup> alternating and varying currents, electro-magnetic theory of light, and the fundamental relations of electricity, magnetism, light, heat, and mechanical energy

Practical laboratory work — testing of dynamos, motors, batteries, lines, lamps, etc.

Drawing — design and drawing of plans for stations and plants

Thesis — a graduation thesis on some special electrical subject assigned will be required at the end of the second year

During both years the students have workshop practice in the actual making of electrical apparatus. Frequent visits are made to electrical factories, stations, and plants.

Weekly evening conferences are held on the current electrical literature.

#### SANITARY ENGINEERING

The full course for the degree of sanitary engineer occupies two years.

The general principles of hygiene — causes of diseases, modes of determining their presence and of preventing and destroying them; bacteriology; organization and duties of health authorities; sanitary jurisprudence.

Organic chemistry — general principles and methods of analysis.

Water supply — rainfall, flow of streams, storage of water, quantity required for cities and towns, asylums, hospitals, etc.; impurities of water, their origin and nature, whether occurring at its source, in storage, or in distribution, and methods of purification, by screens, filter-beds, infiltration galleries, chemical processes, etc.; analysis, microscopical and chemical.



Air — composition, its impurities, effect of these on the sanitary condition of cities and towns, hospitals, asylums, public and private dwellings.

Soil — methods of studying the topographic and geological features of a district in reference to the effect of the quality and characteristics of the soil upon the drainage and other sanitary conditions, the locations of cemeteries, etc.

House drainage — water supply and drainage of public buildings and private dwellings, connected with the removal of laundry, sink, and closet refuse ; practical elements of plumbing.

Sewage — removal and disposal by various methods, including the frequent and systematic removal from cesspools and privies, accompanied by disinfection and deodorization, by the water-carriage system, pneumatic system, etc., to points of its final disposition ; the construction of sewers, including combined and separate systems, outfalls, sea outfalls, tank sewers, ventilation of sewers, etc. ; final disposition of sewage, garbage, and other refuse by cremation furnaces, irrigation, filtration, chemical precipitation ; the construction of plants and machinery for the same, etc.

Ventilation — quantity of air required under various conditions, methods of supplying or renewing air by natural or spontaneous means, by artificial means, including chimneys heated at the base by stoves, or steam coils, and removal by fans or blowers ; the determination of proper methods of introducing fresh air, its proper distribution, dimensions of the air conduits, and final rejection.

Heating — the various means of heating by stoves, hot-air furnaces, hot water, and steam, and the most practical and efficient treatment of problems arising under various circumstances connected with public and private buildings ; the construction of the apparatus and the distribution of heat, whether in connection with or independent of the ventilation.

Drainage — the drainage of rural districts for sanitary objects, the surface and subsoil drainage of cities and towns, drainage of sites for country dwellings, barns and out-houses.

Village sanitation — the construction, care, and management of cesspools, privies, etc., and their disposition with regard to wells and dwellings ; care of streets, gardens, and yards, with reference to the accumulation and removal of refuse ; surface and subsoil drainage.

Pollution of streams — remedies to be adopted, and means of prevention.

Arrangements for preventing and ameliorating the unhealthy conditions arising in certain trades and manufactories.

Streets and pavements, as affecting the health of communities.

The principles of heat and thermo-dynamics, applicable to all constructions connected with heating and ventilation, including boilers, radiators, flow of air through conductors, etc.

Inspections — methods of examination of the sanitary conditions of public and private buildings, towns and villages, and of sewers, drains, and water courses; methods of disposal of sewage and garbage; official inspections by members of boards of health; organizations of health commissions, etc.

## REQUIREMENTS FOR GRADUATION

Every student who has passed satisfactory examinations in all the studies of a course, and completed the required number of projects, dissertations, memoirs, analyses, assays, and drawings, is recommended to the trustees for the degree of engineer of mines, civil engineer, metallurgical engineer, electrical engineer, sanitary engineer, or bachelor of philosophy.

Graduates of the school of mines, and of other institutions of like grade and standing, who fulfil the following conditions, are recommended to the trustees for the degree of doctor of philosophy.

Each candidate shall pursue, for the term of at least two academic years, a course of higher study at the school and under the direction of the faculty, in two or more branches of science, and shall pass an approved examination thereon.

He shall also present an acceptable thesis or dissertation embodying the results of such special study, research, or observation, upon a subject previously approved and accepted by the faculty.

In special cases, and for reasons connected with the work which may be satisfactory to the faculty, the faculty of the school is empowered to grant permission to candidates for the degree of doctor of philosophy to perform their work away from the school, providing that such candidates matriculate at the school as graduate students, and pay the same fees as are required of resident candidates for the same degree.

## BUILDINGS

(Facts not reported)

## ADDITIONAL INFORMATION

Two traveling fellowships in architecture known as the McKim Fellowships in Architecture were created to be awarded for the first time in 1891 and every alternate year thereafter.

## UNION UNIVERSITY

## DUDLEY OBSERVATORY

*Albany*

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
3 Ap	1852	Legislature incorporated Dudley Observatory.
	1856	Observatory formally inaugurated.
10 Ap	1873	Dudley Observatory included in Union University.

Professor B. A. Gould was the first professor. He was succeeded in 1858 by Professor O. M. Mitchell, who died in 1862. Professor G. W. Hough was appointed in July 1865 and served till December 1873. Astronomical operations were then suspended till May 1876 when the present director was appointed.

## TRUSTEES

Elected

- 1858 President, Gen. John F. Rathbone  
 1879 Vice-President, Samuel B. Ward, M. D., Ph. D.  
 1875 Treasurer, Col. Dudley Olcott  
     <sup>1</sup>Secretary, Lewis Boss, M. A.  
 1861 Erastus D. Palmer  
 1872 Hon. Joseph H. Ramsey  
 1872 John M. Crapo  
 1872 Clarence Rathbone  
 1875 Thomas Hun, M. D.

<sup>1</sup> Not a trustee



## Elected

- 1880 Gen. Frederick Townsend, B. A.  
 1882 Hon. Rufus W. Peckham  
 1885 Hon. Abraham Lansing, M. A.  
 1885 Grange Sard  
 1889 Harrison E. Webster, LL. D.

## APPOINTED DURING YEAR

- 1890 Dean Sage

## ADMINISTRATION AND INSTRUCTION

Figures in column at left give first year of service in Dudley.

President of the University, Harrison E. Webster, LL. D.

See also Union College.

- 1876 Director, Lewis Boss, M. A. 372 Hudson av.

B. A. Dartmouth 1870, M. A. 1873; Fellow American Association for the Advancement of Science; Member Astronomische Gesellschaft, National Academy of Science, Foreign associate Astronomical Society; Author Declinations of fixed stars, 1878, Catalogue of Albany zone observations, 1889, numerous memoirs and papers on astronomical subjects.

- 1889 Assistant, Sidney J. Lochner.

B. A. Union 1890.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

## COURSES OF STUDY

No regular course of study is pursued. (See "additional information.")

## BUILDINGS

(Facts not reported)

## ADDITIONAL INFORMATION

The Dudley Observatory having been founded expressly for the purpose of original research in astronomical science, does not engage in the work of academic instruction, though professional students are instructed in the art of astronomical observation and calculation from time to time as opportunity offers.

A provision for astronomical fellowships yielding from \$400 to \$600 annually would greatly increase the facilities of the Observa-



tory in this respect and would attract many students of higher preparatory attainments for post-graduate study. Under proper arrangements, these students would be able to render services in the current work of the Observatory that would to some extent offset the additional burden of educational work thereby entailed on the astronomical staff. This subject is recommended to the attention of those who take pleasure in forwarding the cause of higher scientific education.

This is the only astronomical institution in this state that is regularly endowed for the purpose of scientific research and where provision is made for continuous scientific investigation. The endowment is small, yielding slightly less than \$4,000 annually. It is, therefore, financially one of the weakest professional institutions in America and its means are believed to be surpassed by every other observatory in the country that is engaged in regular and continuous astronomical work; and it is furthermore, with one exception, the only institution of the kind of any importance which has been left exclusively to the support of a single locality. During the past year the work has proceeded on the lines indicated in the last report to the regents. Several publications have been secured, of which the most important is the Albany zone catalogue published in Germany at the cost of the Astronomische Gesellschaft.

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## COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART

*Fourth av. and Seventh st., New York*

### HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month      Year

17 F    1857 Legislature incorporated "The Peter Cooper Union, for the Advancement of Science and Art." The corporate existence to commence when Peter Cooper should transfer to the corporation thereby created the property known as Cooper Institute for the purpose of founding and establishing a public institution for the advancement of science, art, philosophy and letters.

Month    Year

29 Ap 1859 Peter Cooper executed a deed in fee simple of the property, on the conditions specified by the legislature. On assuming their duties the trustees decided that the details of the institution should be arranged with special reference to the intellectual wants and improvement of the working classes.

### TRUSTEES

President, Edward Cooper .....	New York
Treasurer, Wilson G. Hunt .....	"
Secretary, Abram S. Hewitt .....	"
John E. Parsons .....	"
Daniel F. Tiemann .....	"

### ADMINISTRATION

Figures in column at left give first year of service in Cooper.

1869 Director of Night Schools, George W. Plympton, M. A., C. E.  
127 Herkimer st.

C. E. Rensselaer Polytechnic Institute 1847; M. A. Hamilton 1855; M. D. Long Island College Hospital 1880; Professor of engineering and architecture, Cleveland University 1851-2; Professor of mathematics, New York State Normal School 1853-5 and 1858-61; Professor of mathematics, New Jersey State Normal School 1856-8 and 1861-3; Professor of physical science and engineering, Brooklyn Polytechnic Institute 1863-; Professor of chemistry and toxicology, Long Island College Hospital 1865-86.

1872 Principal of Woman's Art School, Susan N. Carter.

Teacher of drawing, George B. Emerson's School, Boston 1853-5; Author Studies in black and white, Art hand-books.

Treasurer, Wilson G. Hunt

Assistant Secretary, L. C. L. Jordan

1871 Curator of Library, J. C. Zachos, 359 W. 22 st.

B. A. and M. A. Kenyon College; Professor of rhetoric, Theological school Meadville, Pa. 1866-7; Editor Ohio journal of education, 1852, New American speaker, 1852, Analytical elocution, 1861, Phonic primer and reader, 1864.

## ADVISORY COUNCIL OF WOMAN'S ART SCHOOL

Mrs Wm. Tilden Blodgett  
 Mrs V. Botta ,  
 Mrs Lloyd S. Bryce  
 Mrs J. H. Choate  
 Mrs Edward Cooper  
 Margaret A. Cooper  
 Mrs Charles P. Daly  
 Mrs Richard Watson Gilder  
 Mrs J. O. Green  
 Mrs Burton N. Harrison

Mrs Abram S. Hewitt  
 Sarah C. Hewitt  
 Eleanor G. Hewitt  
 Mrs Wm. S. Hoyt  
 Elizabeth Marbury  
 Mrs W. H. Osborne  
 Georgina Schuyler  
 Mrs Jonathan Sturges  
 Mrs F. B. Thurber  
 Mrs Thomas M. Wheeler

Clerk, Woman's Art School, Mary A. Vinton

## CUSTODIANS OF LIBRARY

Mrs Curtis      F. A. Curtis  
 Mrs Henry      A. J. White  
 Matthew T. Henry

1873 Director of Laboratory, William Richardson, Ph. D.

Ph. D. Waynesburg College (Pa.) 1887; Professor of chemistry and toxicology, Eclectic Medical College 1882.

## INSTRUCTION

Figures in column at left give first year of service in Cooper and years spent in teaching.

1869 George W. Plympton, M. A., C. E. Professor of  
 38      Physics, Astronomy and Applied Mechanics, 127 Her-  
      kimer st.

See also "Administration."

1889 Robert Spice, B. S. Professor of Chemistry and Practical  
 14      Electricity.

B. S. King's College London 1863; Lecturer on chemistry and physics, Dr Charles E. West's School, Brooklyn 1876-82; Lecturer on chemistry and physics, Mt Pleasant Academy, Sing Sing 1877-9; Lecturer on chemistry and physics, Evening High School 1877-88; Professor of chemistry and physics, Brooklyn High School 1878- ; Professor of analytic chemistry and electric measurements, Polytechnic Institute of Brooklyn 1882-7.

- 1888 Daniel S. Martin, Ph. D. Professor of Geology, 236 W.  
24 Fourth st.  
B. A. University of the City of New York 1863, M. A. 1866;  
Ph. D. University of the State of New York 1880; Professor  
of Latin, Rutgers Female College 1867-8, Professor of geology,  
1868- ; Fellow American Association for the Advancement  
of Science; Member American Institute of Christian Philoso-  
phy, American Institute of Civics, New York State Forestry  
Association; Editor Annals New York academy of science;  
Author Geological map of New York city and environs, 1888.
- 1871 J. C. Zachos, M. A. Professor of Oratory, English Language  
50 and Literature, 359 W. 22 st.  
See also "Administration."
- 1873 Walter Holladay, B. S., C. and M. E. Professor of Differen-  
26 tial and Integral Calculus and Analytic Geometry.  
B. S., C. and M. E., University of Virginia 1872; Member  
Mathematical Society of New York.
- 1888 Ralph S. Rounds. Instructor in Trigonometry, Geometry,  
5 Algebra and Mechanics, 525 Clinton av. Brooklyn.  
B. A. Amherst 1887; Instructor, Adelphi Academy, Brooklyn  
1887-9.
- 1887 J. B. Wallace, B. A. Instructor in Geometry and Algebra,  
4 344 W. 57 st.  
B. A. Dartmouth 1887.
- 1882 J. L. Tupper. Instructor in Geometry and Algebra.  
8
- 1887 C. L. Tyner. Instructor in Geometry and Algebra.  
4
- 1887 Joseph E. Aue. Instructor in Mechanical and Perspective  
3 Drawing.
- 1865 J. A. Saxton, M. A. Instructor in Geometrical and  
25 Mechanical Drawing.
- 1888 Edwin R. Storm. Instructor in Geometrical and Mechanical  
3 Drawing, 1-3 Union sq.
- 1879 E. C. Miller. Instructor in Architectural Drawing.  
11
- 1878 Edward A. Miller. Instructor in Architectural Drawing.  
12
- 1880 Emil F. Maurer. Instructor in Architectural Drawing.  
10



- 1880 J. A. McDougall. Instructor in Cast Drawing.  
10
- 1884 A. M. Turner. Instructor in Form Drawing.  
6
- 1865 Max Eglau. Instructor in Drawing from Copy.  
25
- 1882 H. G. Plumb. Instructor in Drawing from Copy and Form,  
8 34 Beekman pl.
- 1884 Edward Ehrle. Instructor in Industrial Drawing and  
12 Designing, 1111 Second av.
- 1886 Stanislaus Rasario. Instructor in Modeling in Clay  
4
- 1876 R. Swain Gifford, N. A. Oil Painting, 152 W. 57 st.  
15 Member American Water Color Society, British Society of  
Painting and Etching, Society of American Artists.
- 1880 J. Alden Weir, N. A. Teacher of Morning Class in Oil  
10 Painting.
- 1889 W. L. Metcalf. Teacher of Morning Class in Life and Cast  
1 Drawing.
- 1886 Mrs William Stone. Teacher of Designing and Normal  
5 Drawing.
- 1889 Robert Reid. Teacher of Afternoon Class in Life and Cast  
1 Drawing.
- 1889 W. Howard Hart. Teacher of Morning Class in Cast  
1 Drawing.
- 1888 Charles A. Vanderhoof. Teacher of Class in Pen and Ink  
2 Illustration.
- 1875 Mrs M. C. B. Ellis. Teacher of Crayon Photographs.  
15
- 1873 Lucy A. Poë. Teacher of Photo Color and Object Drawing.  
21 Teacher of drawing, Wilmington Hall, England 1866-70.
- 1874 William H. Goodyear. Lecturer on Art, 25 E. 48 st.  
20 M. A. Yale 1867; Curator, Metropolitan Museum of Art 1882-8;  
Member Archeological Institute of America; Author Ancient  
and modern history, History of art, Grammar of the lotus.
- 1887 Thomas Eakins, Lecturer on Anatomy.  
3  
M. E. Robbins, Teacher of Phonography and Typewriting.  
Annie F. Brown, Teacher of Telegraphy.

## HONORARY DEGREES, ETC.

No honorary degrees or college appointments reported.

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

Willis G. Hunt prizes, in	Value
Mechanical drawing, Wellington L. Eckerson . . . . .	\$15
Architectural drawing, Henry Daube . . . . .	15
Cast drawing, Frederick B. Williams . . . . .	15
Form drawing, George Meier . . . . .	15
Mitchell Vance Company prize, for best student in ornamental drawing (a bronze art figure), August Anderson	
E. G. Soltmann prizes (an outfit of drawing materials)	
Elementary mechanical drawing, Philip Creter	
Elementary architectural drawing, Moses Schreiber	
The A. A. Low, Frederick A. Lane and Goodhue prizes, and the trustees' silver and bronze medals, were awarded as follows :	
Drawing from life, full length — First, Susan E. Ogilvie . . .	15
Second, bronze medals, Lora Davis, Alice McCrea, Helen L. Fox	
Drawing from life, heads — First, silver medals, Lora Davis	
Carrie L. Horne	
Second, bronze medal, Elizabeth E. Remer	
Drawing from the antique — First, Helen I. Michell . . . . .	20
Second, silver medals, E. Bertha Clinton, Elizabeth B. Bonta	
Third, bronze medal, Emily Carter	
Drawing from cast — First, Cornelia Mason, Mary Warner, each . . . . .	10
Second, silver medal, Harriotte L. Taliaferro	
Third, bronze medal, Catharine C. Critcher	
Oil painting — First, silver medal, Belinda H. Joüet	
Designing — First, Sarah E. Slater . . . . .	15
Second, Katrina Patterson . . . . .	10
Third, Marie P. Mendes . . . . .	10
Normal drawing and designing — First, L. Bassett, Anna D. Freeman, each . . . . .	15
Second, silver medal, Rebecca M. Mackessack	

	Value
Engraving on wood — First year, Miriam Barr .....	15
Second year, Grace E. Parkhurst .....	10
Third year, Clara Beyer .....	5
Engraving class, drawing from cast — silver medal, Elizabeth S. Gordon	
The Wyckoff, Seamans and Benedict prizes, for most proficient operating on Remington typewriter :	
First prize, Augusta Baumgarten .....	25
Second prize, Carrie Herman .....	15
Third prize, Julia Mallon .....	10

### REQUIREMENTS FOR ADMISSION

Applicants for admission to the night schools must be at least 15 years of age. Residence in New York city is not a necessary condition of admission. A letter of recommendation from his employer is regarded as desirable.

Women are admitted to any of the classes in the scientific department for which they are fitted, but to none of those in the art school except the class in perspective drawing.

Applicants for admission to algebra, class E, must have a thorough knowledge of arithmetic. To class D, must have studied as far as quadratic equations in algebra, and as far as the fourth book in geometry. To classes C, B or A, must give satisfactory evidence of proficiency in the preparatory studies. A knowledge of the higher mathematics is necessary for admission to the class in electrical measurements.

Applicants for admission to the class in perspective drawing must have some knowledge of geometry.

Applicants for admission to the school in stenography must be at least 18 and not over 35 years of age. If required, a responsible written reference must be given as to character. A written guarantee must be furnished from some responsible person not a member of the family, a clergyman or physician preferred, that the applicant is not able to pay for instruction and will be obliged to earn her own living as soon as qualified.

Applicants for admission to the school in telegraphy must be at least 16 and not over 25 years of age. Owing to the increased difficulty in obtaining positions, only such applicants will be

received as may have a positive guarantee of a place waiting for them as soon as they are qualified to fill it. Reference as to character must be given.

## COURSES OF STUDY

The regular course in science requires five terms for its completion.

Class E, first year: Algebra, geometry, natural philosophy and elementary chemistry.

Class D, second year: Algebra, geometry, elementary chemistry and astronomy.

Class C, third year: Trigonometry, descriptive geometry, analytic geometry, mechanics, geology (from October to January) electrical measurements (from January to April).

Class B, fourth year: Analytic geometry, differential and integral calculus and mechanical drawing.

Class A, fifth year: Applied mechanics.

Chemical Analysis is an optional study for members of class A.

Each of the art classes, with the exception of the cast, perspective and elementary mechanical drawing classes, is divided into three sections, each of which are held twice a week.

The cast class is in two sections only, each of which are held three times a week.

The perspective class is in two sections, each held once a week.

One section of beginners in mechanical drawing forms a class, meeting twice a week.

**RUDIMENTAL DRAWING** — This is for beginners in free hand drawing from copy or simple models. The lower divisions of the class copy simple ornamental designs and the more advanced are engaged in figure drawing, copying lithographs of human heads.

**ORNAMENTAL DRAWING** — Pupils require the preparation of at least one term in the rudimental class or its equivalent before entering this class. The work consists in drawing with pen or pencil the more intricate ornamental forms employed in decoration.

**DECORATIVE DESIGNING** — This class is intended to aid a large class of young artisans whose work requires the frequent invention of ornamental forms. The students are specially instructed in



combining simple figures to form ornamental patterns. The practice involves some geometric drawing and some coloring. A term in the rudimental class is a desirable preparation for this class, though not indispensable.

**FORM DRAWING** — The pupils draw from plaster models, mostly relief ornaments of moderate size.

Two terms of free hand drawing from copy are regarded as a necessary preparation for this class.

**CAST DRAWING** — The work consists in drawing from models of antique statuary. Only those who have acquired a good degree of proficiency in free hand drawing are encouraged to enter this class.

**MECHANICAL DRAWING** — Pupils draw from the first with instruments. A complete three years' course is provided for, beginning with simple geometrical problems and ending with the finished shaded drawings of complex machines. The class is in four sections and under two different instructors.

**ARCHITECTURAL DRAWING** — There are five sections of this class under charge of three different instructors. Two different objects are attained in the course: first, the ability to draw ornamental architectural designs according to conventional rules; and second, skill in the preparation of working drawings from given dimensions.

**MODELING IN CLAY** — This is for workers in terra cotta, stucco, marble-cutters and all whose work is relief decoration.

#### STENOGRAPHY

Munson's system is taught.

### REQUIREMENTS FOR GRADUATION

The Cooper medal and diploma are awarded to those who successfully complete the five years' scientific course.

Certificates given on completion of other courses.

### BUILDINGS

Main building, seven story brown stone, built 1854, floor area 84,000 sq. ft., 29 class rooms 4,740 seats and 1,200 desks for standing pupils, value \$700,000.

## ADDITIONAL INFORMATION

All statistics are here given because not complete enough to be included in table 3.

## Calendar for past year

	Night schools	Woman's art school	Class in steno- graphy	Class in telegraph
Entrance examinations held.....	.....	.....	15 S	1 O
Number of weeks in term .....	26	33	33	33
Term began .....	1 O	1 O	1 O	1 O
Commencement held.....	29 My	29 My	29 My	29 My
End of academic fiscal year.....	31 D	31 D	31 D	31 D
Weeks and days in session.....	26-2	33	33	33
Weeks and days, long vacation ...	24-3	17-2	17-2	17-2
Weeks and days, other vacations..	1-1	1-3	1-3	1-3
Closed on legal holidays ... ..	-2	-3	-3	-3

## Classification of students

## NIGHT SCHOOLS

	ARTS	SCIENCE	
	Men	Men	Women
First year .....	1,220	190	8
Second " .....	586	46	8
Third " .....	290	29	2
Fourth " .....	.....	27	1
Fifth " .....	.....	20	1
Total .....	2,096	312	20

## WOMAN'S ART SCHOOL

	Free classes	Pay classes			
		Painting	Cast drawing	Designing	Normal
First year.....	90	10	15	12	9
Second " .....	30	10	6	.....	.....
Third " .....	70	20	5	.....	.....
Fourth " .....	73	10	7	.....	.....
Total .....	263	50	33	12	9

	Men	Women
Total in Night Schools .....	2,408	20
“ Woman’s Art School .....		367
“ Class in Stenography .....		53
“ Class in Telegraphy .....		30
	<u>2,408</u>	<u>470</u>

### Summary of instruction offered

#### NIGHT SCHOOLS

	Total lec- tures and exercises		Total lec- tures and exercises
Algebra .....	78	Quantitative analysis ...	130
Geometry .....	78	Geology .....	12
Trigonometry .....	14	Electricity. ....	12
Descriptive geometry ...	78	Elementary mechanics..	14
Analytic “ .....	50	Applied “ ..	82
Calculus.....	50	English composition....	20
Astronomy. ....	20	Elocution... ..	20
Physics. ....	50	Architecture .....	312
Chemistry .....	75	Drawing.....	1,040
Qualitative analysis. ...	260	Modeling .....	154

#### WOMAN’S ART SCHOOL

	Total lec- tures and exercises
Drawing .....	165
Painting .....	38
Normal drawing and designing .....	168
Photo crayon.....	99
Photo color .....	66

### Apparatus

#### NIGHT SCHOOLS

	Value
Mathematical.....	\$1,500
Astronomic.....	450
Physical.....	3,500
Chemical.....	1,000
Art models.....	500
Total .....	<u>\$6,950</u>

## WOMAN'S ART SCHOOL

Total value of models, properties, photographs, etc. .... \$3,800

## Library

	Night Schools	Woman's Art School
Volumes bought in past year.....	936	50
Added by gift, exchange, etc.....	2,444	9
Pamphlets added .....	145	15
Total additions .....	3,525	74
Total volumes now owned.....	30,337	400
Deposited for use not owned .....		15
Total pamphlets now owned .....	1,500	50
Total volumes and pamphlets .....	31,837	465
Serials bought in past year.....	2150	6
“ given “ “ “ .....	354	.....
Total received .....	504	6
Number of hours open daily in term time....	14	7
On holidays ....	14	.....
On Sundays ....	9	.....
Number of readers at library during year....	566,942	250
Volumes loaned for home use.....		250
Gifts of money during year.....	\$1,100	\$250
Paid during year for books and pamphlets...	11,090	.....
Serials.....	893	.....
Binding and repairs.....	260	.....
Library salaries.....	5,029	.....
All other expenses.....	77	.....
Total expenditures.....	7,449	.....
Present total value of library.....	25,000	1,300

## Museum collections

## NIGHT SCHOOLS

Chemistry, 300 specimens.....	Value \$100
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## SYRACUSE UNIVERSITY

## COLLEGE OF FINE ARTS

*Syracuse*

For historic sketch and trustees see Syracuse University, pp. 1002-1003.

## ADMINISTRATION

Figures in column at left give first year of service in Syracuse University.

1881 Chancellor, Rev. Charles N. Sims, D. D., LL. D.

See also Syracuse University, College of Liberal Arts.

1872 Dean, George Fisk Comfort, L. H. D.

See also Syracuse University, College of Liberal Arts.

## INSTRUCTION

Figures in column at left give first year of service in Syracuse University and years spent in teaching.

1878 George F. Comfort, L. H. D., Dean and Professor of Esthetics  
32 and the History of the Fine Arts.

See also Syracuse University, College of Liberal Arts.

1882 George A. Parker. Professor of Piano and Organ.

12 Graduate of Royal Conservatory of Stuttgart 1878-81; Member  
Manuscript Society of American Composers.

1884 Ella I. French, Mus. B. Instructor of Piano.

12 Mus. B. Syracuse University 1878; Teacher of piano, Mr  
Brown's Young Ladies' Institute 1878-85; Teacher of piano  
Wells College 1883-84.

1886 Robert Frank Dallas, M. P. Instructor in Oil Painting and  
7 Modeling, 717 E. Fayette st.

B. P. Syracuse University 1878; M. P. 1886.

1887 Frederick C. Lyford, B. P. Instructor in Perspective Draw-  
4 ing and Artistic Anatomy.

See also Syracuse University, College of Liberal Arts.

1890 Conrad L. Becker. Instructor of Violin and Piano, 105  
4 Caroline st.

1889 Luella M. Stewart. Instructor in Water Color Painting and  
9 Free Hand Drawing, 352 W. Onondaga st.

1889 Arthur B. Clark, B. Ar. Instructor in Architecture.

2 B. Ar. Syracuse University 1888, Professor of drawing and Director of the State Reformatory Trade Schools, Elmira, 1888-9.

1889 Elmer I. Read, B. P. Instructor in Etching and Free Hand  
4 Drawing.

B. P. Syracuse University; Professor of drawing, Pennsylvania State Normal School, 1887-9.

1889 Ruth Elizabeth Guibault, Mus. B. Instructor of Piano, 912  
7 Madison st.

Mus. B. Syracuse University 1884.

1890 Percy Goetschius. Professor of History and Theory of Music,  
15 Hotel Burns

Instructor, Royal Conservatory of Music, Stuttgart, 1876-90;  
Author Materials used in musical composition, Revision of Mendelssohn's complete pianoforte works.

1890 Marie Louise Everett. Instructor in Vocal Music, 716  
Crouse av.

Graduated at State University of Wisconsin; Studied music in London and Paris.

1890 William H. Barber. Instructor of Piano, 1227 E. Genesee st.  
1 Graduate Royal Conservatory of Music, Stuttgart.

#### VACANCIES

Kate E. Stark, Professor of vocal music. Term expired 25 Je  
1890.

Albert Kuenzlen, Instructor of violin and piano. Resigned 25  
Je 1890.

#### PROMOTIONS

##### In salary alone

Arthur B. Clark, B. Ar.

George A. Parker

Elmer J. Read, B. P.

Luella M. Stewart

#### HONORARY DEGREES, ETC.

For honorary degrees, college appointments, prizes, scholarships and fellowships see Syracuse University, College of Liberal Arts, pp. 1007-1008.

## REQUIREMENTS FOR ADMISSION

Candidates for admission to the course in architecture are examined in English grammar, geography, American history, arithmetic, natural philosophy, algebra as far as to the calculus of radicals, plane geometry and free hand drawing sufficient to represent the progress usually made by students in at least one year of thorough and systematic study.

Candidates for admission to the course in painting are examined in English grammar, geography, American history, arithmetic, natural philosophy and free hand drawing sufficient to represent the progress made in at least two years of thorough and systematic study.

Candidates for admission to the course in music are examined in the same studies as for the course in painting, with the exception that two years of thorough and systematic study in music replace the two years in drawing.

Special students, i. e., those not proposing to graduate in either course, may enter at any time and take such branches of study as they are prepared to pursue with advantage to themselves, and without detriment to the classes.

## COURSES OF STUDY

### Architecture and painting

The courses of study already established include systematic and progressive instruction in the theory, the history, and the practice of architecture and painting, and in those branches of mathematics, natural science, history, language and philosophy which bear most intimately and directly on these arts, and without a knowledge of which success in the higher domain of art is impossible.

The professors are practical workers in their several departments. The students have access to their studios and offices, and have an opportunity of witnessing works of art in process of completion by their hands or under their direction.

It is the aim to develop the talents of the students in such a way that each student shall retain his individuality of character and manner, and not to mold after the same arbitrary method.

## FREE HAND DRAWING

Free hand drawing is taught extensively in the courses in architecture and painting, as giving the only basis for accuracy in observing nature and art, and to secure freedom and precision in delineating and executing designs. It is a required exercise during nearly the entire course in painting.

Drawing from objects, from nature, from memory and from original design is introduced in such variety, sequence and extent, as is fitting to the several students. While instruction is given to all in the use of the lead-pencil, the pen, charcoal, crayon, India ink and sepia, the students are left largely to their own tastes in the selection of the chief instrument and the manner of executing their own drawing.

## ARCHITECTURAL DRAFTING

Under this general term in the schedule of studies is included instruction in: the use of drafting instruments; the drawing of plans, elevations, sections, ornaments, details and working drawings; the principles of taste in their application to architectural composition; the study of works finished or in progress, and the sketching of completed buildings; the appropriate and economical use of building materials; the principles and processes of construction; the laws and usages in drawing up contracts and specifications, in making estimates and measurements, and in superintending the erection of buildings. These subjects will be introduced in such sequence as may be found desirable with particular students and classes. Instruction is also given in the principles and practice of decorative art in its special relations to architecture, and of landscape gardening and architecture.

## OIL PAINTING

A longer time is appropriated in the curriculum to instruction in oil than in water color painting. With such students as may prefer it, however, an equivalent time may be substituted in whole or in part, to study in water colors, instead of oil. Instruction is given in the use of colors, the principles of technical execution, and the laws of composition; at the same time students are left to develop originality and individuality of style, and to decide whether to devote themselves to any particular branch of painting, such as flower, fruit, animal, still life, portrait, genre, or landscape painting, or to divide their time among several of these branches.



## LINEAR PERSPECTIVE

Linear perspective is taught scientifically and practically during the first two years of both courses of study. Thus precision of form is taught in connection with the greater liberty of motion acquired in free hand drawing. The projection of shades and shadows is taught as a sequence to the projection of the forms of solid bodies.

## MODELING

Instruction is given in all the processes of modeling in clay, of making molds, and of making casts in plaster. Prominence is given to modeling as a most important means of cultivating a feeling for solid form. To a certain extent, this may be substituted for free hand drawing in both courses.

## ETCHING

The manipulations of this form of engraving are taught both theoretically and practically. Students are also taught the mode of printing etchings, by an excellent press.

## PHOTOGRAPHY

Photography is included in the studies of both curriculums. Any person wishing to secure a complete education as a photographic artist may substitute extended practice in this art, for a large portion of the study assigned to oils in the course in painting, and on completing this course may receive the degree of bachelor of painting.

## ESTHETICS

Instruction is given by lectures in the general principles of the science of esthetics, which gives the foundation of all the fine arts. The principles of art criticism which apply specially to architecture and painting are treated more at length in separate courses of lectures.

## HISTORY OF THE FINE ARTS

A course of lectures is given on the history of the fine arts in outline, in which are traced the leading features of the fine arts, as a whole, as they have manifested themselves in history, and the relation which these arts have held to other elements of civilization. Courses of lectures are also given on the special history of architecture, sculpture and painting.

## CLASSICAL MYTHOLOGY AND ARCHEOLOGY

Courses of lectures are given on the mythologies of the ancient Egyptians, Greeks and Romans, with special reference to their illustration in ancient art, and on the leading features of classical archeology, and the geographical distribution of monuments of ancient art.

## CHRISTIAN AND MEDIEVAL ARCHEOLOGY

Courses of lectures are given on Christian archeology, in which are traced the origin and development of symbolism and the illustration of Christian doctrine in the fine arts; and on the general principles of medieval archeology.

## ESSAYS

During the first and second terms of the senior year each student presents two essays of not less than 600 words each, on subjects relating to the fine arts, and during the last term a thesis of not less than 1,000 words, on some subject relating to the fine arts.

## ART LITERATURE

A course of lectures is given on the encyclopedia of art literature, consisting of critical remarks and dissertations on the characteristic features, the relative value, the date and place of publication, the present cost, and the authorship of the most important publications, both books and periodicals, which have been issued in Europe and America on esthetics and the history, theory and practice of the formative arts.

## RELATED STUDIES

To a limited extent, other studies from the college of liberal arts may be substituted for those designated in the schedules.

The college of medicine offers excellent opportunity to such students as may desire to make more extensive studies in human and comparative anatomy.

## Music

This course includes systematic and progressive instruction in the theory, history and practice of music, and is arranged with a view to enable the student to become an accomplished musician.

Other instruments as the violin, viola, violincello, cornet or clarinet, may be substituted for the piano, after the freshman year; the organ after the sophomore year.

Vocal instruction may take the place of instrumental after the sophomore year.

The study of vocal music for one year will be required of all who propose to graduate in the course of music.

Various accessory branches of study are introduced, which have a more or less intimate connection with the art of music, and which also have a relation to general liberal culture. These are hygiene, physics, elocution, rhetoric, English literature; the French, German and Italian languages; ancient, medieval and modern history and the history of civilization; the science of esthetics and the general history of the fine arts. The same latitude for substitution for these accessory studies is permitted as in other courses.

#### THE PIANO

This course is divided into gymnasial and collegiate.

##### *Gymnasial department*

This is intended for students beginning piano, and those who are not sufficiently advanced to enter the collegiate classes.

*First year* — The first few weeks are devoted to the formation of a correct touch by means of technical exercises, after which Lebert & Stark's method, first part, Köhler's practical piano school or Jacques Schmidt's Erster Lehrmeister is used. Also studies by Loeschorn, Lemoine, Bertini and occasionally sonatinas by Clementi, Krause and others are given.

*Second year* — Plaidy's Technical studies or Herz's Scales and chords; Lemoine op. 37, book 2; Loeschhorn op. 65, book 3; Duvernoy op. 120; Burgmüller op. 100; Köhler's Progressive studies and easy pieces by Gurlitt, Biall, Lichner, Kuhlau and others.

##### *Collegiate department*

To enter this course students who have prepared elsewhere are required to show a knowledge of the simple scales and arpeggios, also to perform a composition of their own selection, and to read an easy sonatina at sight.

*Freshman* — Heller op. 47; Czerny or Köhler's School of velocity; Bertini op. 29 and 32; Loeschhorn's Progressive studies; Krause's Trill studies op. 2; Doering op. 8; Easy sonatas by Haydn, Dussek, Mozart and Clementi and selections from the work of other masters suitable to this grade.



*Sophomore* — Heller op. 45 and 46 ; Czerny op. 740, books 1 and 2 ; Bach Two voiced inventions ; Loeschhorn op. 38 ; Köhler's Arpeggio school op. 186 ; Czerny's Staccato and legato studies op. 335 ; Sonatas by Mozart, Beethoven ; Mendelssohn's Songs without words ; Chopin's Mazurkas and nocturnes ; together with works of Raff, Rheinberger, Bendel, Gade, Scharwenka, Moszkowsky and other modern composers.

*Junior* — Cramer's Studies (von Bülow) ; Heller's Art of phrasing ; Clementi Gradus ad Parnassum ; Bach Three voiced inventions ; Moscheles op. 70 ; Czerny Fingerfertigkeit, books 3 and 4 ; Köhler's Special studies ; Kullak and Loeschhorn Octave studies ; the more difficult sonatas of Beethoven ; the larger compositions of Chopin and Mendelssohn ; concertos by Mozart, Hummel ; selections from Weber, Schumann, Schubert, Dupont, Bennett and others.

*Senior* — Chopin, études ; Bach, well tempered clavichord ; Tausig, daily studies ; Henselt, études ; Saint Saens, op. 52 ; concertos and concerted pieces by Beethoven, Mendelssohn, Chopin, Rubinstein and Henselt ; also works of Grieg, Brahms, Liszt, Tschaikowski, etc.

Students of this grade have the opportunity of taking part in ensemble playing.

#### THE VIOLIN

For beginners, the first part of the violin schools, by either Louis Schubert, Carl Henning, Edm. Singer or Hermann is used, and when necessary there are introduced easy arrangements of melodious pieces for violin with piano accompaniment, such as Melodien Sammlung by H. Urban, etc., Selections from easy duets for two violins by Pleyel, Gebauer or Nazas. To be followed by part 2 of Henning's Violin school, Baillot's Scales in two octaves ; études by Ferd. David, op. 45 or first part of Gradus ad Parnassum, by Jacques Dont ; and by easy solos by Alard, Hermann, de Beriot and others. Compositions for violin and piano are introduced as soon as practicable. Selections from the following are made according to the ability of the student ; Dussek's Sonatas for piano with added violin part ; Sonatas for piano and violin by F. Schubert, Hauptmann, Haydn and Mozart ; Beethoven's Serenade op. 8, arranged for piano and violin, etc. ; Later, Part 3 of Henning's Violin school ; Scales in three octaves, by Hüllweck, part 1 of his 25 Studies for the violin ; Schradieck's Violin Technic



and Tonleiterstudien; the studies by Kreutzer, Fiorillo, Rovelli and Rode; Concertos by Viotti or Rode; Solos by David, Alard, de Beriot; Duettos by Viotti or Spohr. Lastly the 24 études by Gavinié, Alard's 10 études Artistiques op. 19 and Abel's adaptation for the Violin of Cramer's famous Piano studies; Concertos by Mendelssohn, Beethoven, Spohr, Molique and Max Bruch; Sonatas for violin by Bach; Solos by Vieuxtemps, Ernst, Wieniawski, Sarasate and other modern composers.

#### THE ORGAN

As the most practical method of preparing for the study of the organ, the students devote the first two years to practicing on the piano.

Ritter's Art of organ playing is used, supplemented by compositions of the German, French and English schools.

#### CULTIVATION OF THE VOICE

Students are trained either singly or in classes, and in the classes ample opportunity is afforded for the individual student to observe the efforts of others and to hear the criticisms of the professor on their exercises. The development of the same timbre and beauty of tone throughout the entire voice, correct breathing, correct vowel formation, articulation and pronunciation first receive attention.

Federlein's Practical school of voice culture is employed. Subsequently, vocalises of Concone, Sieber, Abt, Panofka and others are added, and the works of the best German, Italian and French song writers interpreted as the student's ability may warrant.

#### CHORUS SINGING

Any student of the university may join this class. Compositions of sacred and secular character are carefully practiced.

#### RECITALS

All students of music are required to be present at the weekly recitals, at which every student may be called on to perform at least once each term. Critical remarks are made by the professors on the merits of the pieces rendered, and their relations to other works by the same or other authors.

## THEORY OF MUSIC

The theory of music, embracing harmony, musical forms, counterpoint and fugue is taught in classes. Goetschius' Materials of composition and Stainer's Treatise on the fugue are used. Instruction is given by lectures, with abundant illustrations, and explanations on the blackboard, of which the candidates for graduation are required to make careful digests.

## ORCHESTRAL PRACTICE

Opportunity for orchestral practice is frequently given to such students on the organ, piano, violin or other instrument, as are qualified to take part in it.

## HISTORY OF MUSIC

Lectures are given on the history of music during the entire sophomore and junior years. Readings are also appointed for the classes, between the lectures.

## TEACHING

Opportunity is given to advanced students who are fully qualified, to assist in instructing the preliminary classes in music, for the purpose of giving pedagogic experience under the supervision of the faculty.

The following schedules exhibit the courses of study in architecture, painting and music. A limited amount of substitution of other equally pertinent, but equally thorough and valuable study may be allowed in any of the courses. But it is required that a course shall be substantially covered before a diploma is given.

## ARCHITECTURE

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
Hours per Week		Hours per Week		Hours per Week		Hours per Week	
FIRST TERM							
5	Linear perspective	2	Architectural drafting	5	Architectural drafting	6	Architectural drafting
5	Drawing from patterns	3	Drawing from nature	3	Modeling	1	History of architecture
3	Drawing from the solid	2	Linear perspective	2	Isometrical perspective	1	Classical mythology
4	Algebra	2	Water color painting	1	Esthetics	1	Classical archeology
3	German language	4	Trigonometry	2	Medieval history	5	Strength of materials
		3	Physics	4	French language	2	Italian language
						3	Geology
							Two essays on art
SECOND TERM							
3	Architectural drafting	3	Architectural drafting	5	Architectural drafting	5	Architectural drafting
3	Linear perspective	2	Linear perspective	2	Artistic anatomy	2	Decorative art
3	Drawing from solids	2	Water color painting	2	Etching	1	History of sculpture
2	Shades and shadows	3	Descriptive geometry	1	History of fine arts in outline	1	Medieval archeology
4	Algebra	4	Analytic geometry	3	Modern history	4	Bridges and roofs
3	German language	3	Physics	3	French language	2	Italian language
				4	Chemistry	2	Two essays on art
THIRD TERM							
3	Architectural drafting	3	Architectural drafting	4	Architectural drafting	1	Modern architecture
2	Linear perspective	2	Lettering and illumination	2	Photography	1	History of painting
2	Drawing from casts	3	India ink and sepia drawing	1	History of fine arts in outline	1	Encyclopedia art literature
2	Shades and shadows	3	Modeling	2	Topographical drawing	1	Landscape gardening
5	Geometry	4	Calculus	5	Analytic mechanics	1	Stability of structures
5	German language	2	Botany	2	French language	4	Project drawing with specifications
		2	Ancient history	2	Modern history		Graduating thesis

## PAINTING

FRESHMAN		SOPHOMORE		JUNIOR		SENIOR	
Hours per week		Hours per week		Hours per week		Hours per week	
				FIRST TERM			
5	Linear perspective	3	Drawing from nature	5	Oil painting	5	Oil painting, landscape
5	Drawing from the flat	5	Water color painting	3	Drawing from casts	3	Drawing from nature
3	German language	2	Drawing from casts	2	Modeling	1	History of architecture
1	English criticism	3	German language	1	Esthetics	1	Classical mythology
1	Elocution	2	Medieval history	4	French language	1	Classical archeology
						1	History and styles of engraving
						1	Italian language
						2	Political economy
						3	Two essays on art
				SECOND TERM			
5	Linear perspective	5	Water color painting	5	Oil painting	5	Oil painting, figure
5	Shades and shadows	5	Artistic anatomy	2	Drawing from casts	4	Drawing from life
3	Drawing from solids	2	Animal drawing	3	Etching	2	Decorative art
3	German language	3	Modern history	1	History of fine arts in outline	1	History of sculpture
1	English criticism			3	English literature	2	Italian language
1	Elocution			2	Chromatology	3	Descriptive geology and lithology
				THIRD TERM			
5	Linear perspective	5	Water color painting	5	Oil painting, landscape	10	Original composition and graduating painting
2	Shades and shadows	3	Drawing from nature	1	Drawing from life	1	History of painting
3	Drawing from casts	3	Modeling	2	History of fine arts in outline	1	Art criticism
5	Drawing from nature	3	Botany	3	Photography	1	Encyclopedia of art literature
2	German language	2	Modern history		Physiols	1	Christian archeology and symbolism in art
2	Ancient history						Graduating thesis



## MUSIC

FRESHMAN			SOPHOMORE			JUNIOR			SENIOR		
Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week	Hours per week
<b>FIRST TERM</b>			<b>FIRST TERM</b>			<b>FIRST TERM</b>			<b>FIRST TERM</b>		
2	Piano	2	Piano	2	Piano	2	Piano	2	Piano	2	Piano
1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Polyphonic forms mus. com.
2	Theoretical rudiments	2	Chorus singing	2	Chorus singing	1	Chorus singing	2	Chorus singing	2	Cultivation of the voice
1	Recital	1	Violin	2	Violin	2	Violin	1	Chorus singing	1	Violin, quartet playing
2	Italian language	1	Recital	1	Recital	1	History of music	2	Violin, quartet playing	2	Recital
1	English criticism	1	History of music	1	History of music	1	Organ	1	Ensemble playing	1	Ensemble playing
1	Elocution	2	Modulation	2	Medieval history	2	Chords and figuration	1	Organ	1	Organ
1	Chorus singing	3	German language	2	German language	4	French	3	German or physics	3	German or physics
								1	Esthetics	1	Esthetics
									Two essays on art		Two essays on art
<b>SECOND TERM</b>			<b>SECOND TERM</b>			<b>SECOND TERM</b>			<b>SECOND TERM</b>		
2	Piano	2	Piano	2	Piano	2	Piano	2	Piano	2	Piano
1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice	1	Cultivation of the voice
2	Chorus singing	2	Chorus singing	2	Chorus singing	2	Chorus singing	2	Chorus singing	2	Chorus singing
1	Harmony	1	Violin	2	Violin	1	Violin	1	Violin, solo playing	1	Violin, solo playing
2	Recital	1	Recital	1	Recital	1	History of music	1	Recital	1	Recital
1	Italian language	1	History of music	1	History of music	1	Organ	1	Ensemble playing	1	Ensemble playing
2	English criticism	2	Modulation	1	Modulation	2	Smaller forms of musical com.	1	Organ	1	Organ
1	Elocution	3	Modern history	3	German language	3	French literature	1	Counterpoint and fugue	1	Counterpoint and fugue
									History of the fine arts		History of the fine arts
									Two essays on art		Two essays on art
<b>THIRD TERM</b>			<b>THIRD TERM</b>			<b>THIRD TERM</b>			<b>THIRD TERM</b>		
2	Piano	2	Piano	2	Piano	2	Piano	2	Piano	2	Piano
1	Cultivation of the voice	1	Cultivation of the voice	2	Cultivation of the voice	2	Cultivation of the voice	2	Cultivation of the voice	2	Cultivation of the voice
1	Chorus singing	1	Chorus singing	2	Chorus singing	2	Chorus singing	1	Chorus singing	1	Chorus singing
2	Harmony	2	Violin	2	Violin	1	Violin	1	Violin	1	Violin
2	Recital	2	Recital	1	Recital	1	History of music	1	Recital	1	Recital
1	Italian language	1	History of music	1	History of music	1	Chorus singing	1	Ensemble playing	1	Ensemble playing
2	English criticism	2	Modulation	1	Modulation	1	Organ	1	Organ	1	Organ
1	Elocution	5	German language	2	German language	2	Smaller forms of musical com.	1	History of the fine arts	1	History of the fine arts
							French	1	Encyclopedia of musical lit.	1	Encyclopedia of musical lit.
							Elocution	1	Graduating thesis		Graduating thesis
							English criticism				

## REQUIREMENTS FOR GRADUATION

Students completing the course in architecture receive the degree of bachelor of agriculture ; the course in painting, bachelor of painting ; the course in music, bachelor of music ; special students may receive certificates of progress and proficiency. Those desiring to do so may take one or more branches of the course in music, without the accompanying literary studies, and when completed may receive a certificate under the seal of the university.

A graduate in either of the above courses who shall have pursued professional work for three years after graduation may receive the second or master's degree on the following conditions: the presentation to the college of an approved original work in his particular branch of art ; examination in an approved course of reading in esthetics and in the history of his department of art.

## BUILDINGS

See Syracuse University, College of Liberal Arts, p. 1022.

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## COLUMBIA COLLEGE

### SCHOOL OF POLITICAL SCIENCE

*Madison av. and 49 st., New York*

For historic sketch and trustees see Columbia College, pp. 543-545.

## ADMINISTRATION

Figures in column at left give first year of service in Columbia School of Political Science.

1890 President, Seth Low, LL. D.

See also Columbia College, School of Arts.

1876 Dean, John W. Burgess, M. A., Ph. D., LL. D.

See also Columbia College, School of Arts.

1883 Secretary, Frank J. Goodnow, LL. B., M. A.

See also Columbia College, School of Arts.

Registrar, William B. Nye

## INSTRUCTION

Figures in column at left give first year of service in Columbia School of Political Science and years spent in teaching.

1876 John W. Burgess, M. A., Ph. D., LL. D. Dean and Professor of Constitutional and International History and Law.

See also Columbia College, School of Arts.

1878 Richmond Mayo Smith, M. A., Ph. D. Professor of Political  
14 Economy and Social Science.

See also Columbia College, School of Arts.

1880 Edmund Munroe Smith, M. A., J. U. D. Adjunct Professor of History and Lecturer on the Roman Law and Comparative Jurisprudence.

See also Columbia College, School of Arts.

1883 Frank J. Goodnow, LL. B., M. A. Adjunct Professor of  
7 Administrative Law.

See also Columbia College, School of Arts.

1885 Edwin R. A. Seligman, LL. D., Ph. D. Adjunct Professor  
5 of Political Economy, 58 W. 71 st.

B. A. Columbia 1879, M. A. 1883, LL. B. 1884, Ph. D. 1884; Lecturer on economics Columbia College 1885-8; Adjunct professor of political economy 1888; Member American Economic Association; Author Railroad tariffs, Taxation of corporations; Co-editor Political science quarterly, Studies in history, economics and public law.

1883 Frederick W. Whitridge, LL. B., M. A. Lecturer on the Political History of the State of New York.

1887 William A. Dunning, Ph. D. Prize Lecturer on the Relations of England and Ireland.

1887 Charles B. Spahr, Ph. D. Prize Lecturer.

1888 A. C. Bernheim, LL. B., Ph. D. Prize Lecturer on New  
2 York State Government, 12 E. 65 st.

Ph. B. Columbia 1884, Ph. D. 1886; Member American Historic Association, American Economic Association.

1889 Frederic A. Bancroft, Ph. D. Prize Lecturer on International Public Law.

1890 Herbert L. Osgood, M. A., Ph. D. Adjunct Professor of  
9 History, 196 Joralemon st., Brooklyn.

B. A. Amherst 1877, M. A. 1880; Ph. D. Columbia 1889; Teacher of English, Worcester (Mass.) Academy 1877-9; Teacher of history, Central School, Brooklyn 1883-9; Member American Historic Association, American Economic Association; Author of various articles in Political science quarterly.

## PROMOTIONS

**In salary alone**

Frank J. Goodnow, LL. B., M. A.

**HONORARY DEGREES, ETC.**

No honorary degrees or college appointments reported.

**PRIZES, SCHOLARSHIPS AND FELLOWSHIPS**

	Value
Seligman fellowship, Frank J. Crowell, 109 W. 47 st. . . . .	\$250
Charles H. J. Douglas, Brooklyn . . . . .	250
J. F. Fenton, Trenton, N. J. . . . .	250
Louis Katzenstein . . . . .	250
Prize lectureship in political economy, Charles B. Spahr . . .	500

**REQUIREMENTS FOR ADMISSION**

(None reported)

**COURSES OF STUDY****Constitutional history**

The student is supposed to be familiar with the outlines of European history, ancient and modern. Students who are not thus prepared are recommended to take the undergraduate courses in medieval and modern history. The courses of lectures held in the school are as follows :

*General political and constitutional history*, comprehending in detail: A view of the political civilization of imperial Rome; the history of the development of the government of the Christian church into the form of papal monarchy; the overthrow of the Roman imperial system and the establishment of German kingdoms throughout middle, western and southern Europe; the character and constitution of these kingdoms; the conversion of the Germans to the Christian church, and the relations which the Christian church assumed towards the Germanic states; consolidation of the German kingdoms into the European empire of Charlemagne; character and constitution of the Carolingian state; its disruption through the development of the feudal system and the independent hierarchic church and divisions into the kingdoms of Germany, France and Italy; character and history of the feudal



system as a state form ; re-establishment of the imperial authority by the re-connection of Germany with Italy ; conflict of the middle ages between church and state ; the political disorganization and papal despotism resulting from the same ; the development of the absolute monarchy and the reformation ; the limitation of absolute kingly power and the development of constitutionalism — first in England, then in United States, thirdly in France, and fourthly in Germany ; lastly, the realization of the constitutional idea of the 19th century.

*Political and constitutional history of England* — This course supplements the general course above outlined, giving a fuller view of the constitutional development of England from the Anglo-Saxon period to the present day.

*Political and constitutional history of the United States* — This course of lectures covers the history of the colonies and of the revolutionary war ; the formation and dissolution of the confederate constitution ; the formation of the constitution of 1787, and its application down to the civil war ; the changes wrought in the constitution by the civil war, and the resulting transformation of the public law of the United States.

*The political and constitutional history of Rome* is contained in the general history of Roman law. The topics to which special attention is paid are : the probable origin of the city and its relation to the Latin confederacy ; the character and mutual relation of the gentes and the kingship ; the Servian constitution and the aristocratic reaction ; the establishment of the aristocratic republic ; the struggle between the orders and the modification of the constitution ; the conquest of Italy and the relations established between Rome and the conquered states ; the increase of the powers of the Roman senate ; the conquest of the Mediterranean basin and the organization and government of the provinces ; the social and economic effects of the conquest upon the Roman people ; the struggle between the senatorial clique and the party of reform ; the social and civil wars and the establishment of the principate ; the development, in the third century after Christ, of the absolute empire ; the alliance of the empire with the Christian church ; the conquest of Italy by the Germans.

*Political history of the state of New York* — The purpose of this course is to give a knowledge of the constitutional development and political history of the state of New York, beginning with

the foundation of the colony by the Dutch and extending to the present time. It gives a brief account of the condition of the colony of New York, and the constitution of its government; then of the constitution made in 1777, and of each of the constitutions of 1821 and 1846, the amendments of 1875, together with the conventions in which each of these constitutions was made; also the history of political parties in the state of New York, showing their particular relation to these constitutions, and showing finally the methods of procedure of those parties and the influence exercised by them on the legislation and procedure or "practical politics" of other states and of the great national political parties.

*Historical and political geography*—The purpose of this course is to give a description of the physical geography of Europe; to point out the various sections into which it is divided; to trace the territorial growth of modern European states; to describe the various geographical changes that have been made in the history of Europe; and to point out the ethnic conditions of the present states of the continent.

*The relations of England and Ireland*—In a general way the Irish question has been the question of imposing on the last and most persistent remnant of the old Celtic race the Teutonic ideas and institutions that have been developed in England. Three phases of the process are clearly distinguishable in history—the political, the religious, and the economical. It is designed in the lectures to follow out in some detail the modifications in the relations of the two islands affected by the varying prominence of these different phases. The long struggle for English political supremacy over all Ireland, from the 12th to the 17th century, the religious wars, and the ruthless suppression of the Catholic population during the two succeeding centuries, and the origin and development of the land question out of the circumstances of both these periods, are described with special reference to their influence on the modern state of Irish affairs. Incidentally to these leading topics, the questions of governmental organization that have been prominent from time to time since the conquest are discussed, and the history of the Irish parliament is followed out in such a way as to illustrate the nature and importance of the agitation for home rule.

*New York city politics*—This course treats of the relations of the city to the state, showing the growth of municipal independ-

ence. The early charters conferred but few rights on the city, the selection of the most important city officials being made at Albany. Tammany hall has been the most important and powerful party organization. A brief history of the Tammany organization, its rules, and its method of nominating public officers will be given. The "Tweed ring" and the efforts of purifying city politics since its downfall will be described, including the reform charter of 1873, the amendments of 1884, the report of the Tilden committee in 1875, and of the Roosevelt and Gibbs investigating committees.

### Constitutional and administrative law

*Comparative constitutional law of the principal European states and of the United States*; comprehending a comparison of the provisions of the constitution of England, United States, France and Germany, the interpretation of the same by the legislative enactments and judicial decisions of these states, and the generalization from them of the fundamental principles of public law, common to them all.

*Comparative constitutional law of the several commonwealths of the American Union*—In this course of lectures comparison is made in the same manner of the constitutions of the 38 states of the Union.

*Comparative administrative law of the principal European states and of the United States*—The purpose of this course of lectures is to give a description of the methods of administration in the United States, France, Germany and England. Special attention will be given to the laws both of congress and of the different state legislatures, while the laws of foreign countries will be referred to for the purpose of instruction and comparison. The following list of topics will give a general idea of the subject, for which the name of administrative law has been chosen, because both in France and Germany, where this special part of the public law has been selected as the object of a thorough course of instruction, a similar name has been made use of.

*General part*—The separation of powers; the executive powers; administrative councils; heads of departments; their tenure of office, their powers and duties; the general system of local government; officers, their appointment or election, their duties, their rights, removal from office; the administration in action; the control over the administration. This control is threefold in



its character. 1 *Administrative control*: This is exercised by the superior over the inferior administrative officers by means of the power of removal and the power (given in many cases) to annul or amend administrative acts. 2 *Judicial control*: This is exercised by the courts, to which recourse is often granted against the action of the administration. Here the new courts will be examined, which have been established in France and Germany during this century, and to which the name of administrative courts has been given. 3 *Legislative control*: This is exercised by the legislature by means of its power to inform itself of the acts of the administration, and, if need be, to impeach administrative officers.

*Special part* — This part of the lectures will treat of the relations of the administrative authorities, both general and local, with the citizens. Book 1, *Financial administration*: The management of public property, taxation, and public accounts, considered from the administrative rather than from the financial standpoint.— Book 2, *Internal administration*: The legal provisions which aim at the prevention of evil, and which are sometimes designated as police measures — measures tending to prevent public disorder, public immorality, and disease. Further, provisions of a more positive character, whose purpose is to promote the public welfare; thus measures taken to provide means of public communication; to further the interests of trade, commerce, and industry; to ensure the control of the state over enterprises of a quasi-public character, such as railway companies and institutions of credit; to assist the poor, and educate the ignorant.

Each topic which will come under consideration will be treated historically, and with reference to the positive existing law: and for matters of special interest the comparison of systems of legislation will be extended to other countries than the four mentioned, when it is thought that this may be done with profit. In general, however, the comparison will be limited to the United States, France, Germany and England.

*Local government* — This course will be devoted to the consideration of the various important systems of local government in the rural districts. The organization of the town and county and their corresponding divisions in other countries will be treated and special attention will be directed to the historic development of existing systems, and to the question of administrative centralization.



*Municipal administration* — The subjects to which special attention will be directed in these lectures are: the growth and importance of cities; the independence of cities from state control; the city as a public organ, and as a juristic person — a corporation; city organization and municipal elections; municipal civil service; city property and local taxation. In these lectures special attention is given to American cities and the city of New York; but the experience of foreign cities will be appealed to whenever it is thought that any thing may be learned therefrom.

*Seminarium in constitutional and administrative law.*

### Political economy and social science

It is presumed that students possess a knowledge of the general principles of political economy as laid down in the ordinary manuals by Walker or Mill, before entering the school. Students who are not thus prepared are recommended to take the undergraduate course on the elements of political economy.

*Historical and practical political economy* — This course is intended to give the student a knowledge of the economic development of the world, in order that he may understand present economic institutions and solve present economic problems. The principal topics are: Introduction, concerning the study of political economy and its relation to political science; general sketch of the economic development of the world; the institutions of private property, bequest, and inheritance, and the principle of personal liberty as affecting the economic condition of the world; the problems of production, such as land tenure, population, capital, different forms of productive enterprise, statistics of production, particularly the natural resources of the United States; problems of exchange, such as free trade and protection, railroads money, bimetallism, paper-money, banking, commercial crises, etc.; problems of distribution, such as wages, trades-unions, cooperation, poor relief, factory laws, profit and interest, rent, progress and poverty; and finally a consideration of the function of the state in economic affairs.

*Science and finance* — This course is also historic as well as comparative and critical. It treats of the expenditure of the state, and the methods of meeting the same among different civilized nations. It describes the different kinds of state revenues, especially taxes, and discusses the principles of taxation. It considers

also public debt, methods of borrowing money, redemption, refunding, repudiation, etc. Finally it describes the financial organization of the state, by which the revenue is collected and expended. Students are furnished with the current public documents of the United States treasury, and expected to understand all the facts in regard to public debt, banking, and coinage therein contained.

*Financial history of the United States* — This course endeavors to present a complete survey of American legislation on currency, finance, and taxation, as well as its connection with the state of industry and commerce. Attention is called specially to the financial history of the colonies, (colonial currency and taxation); to the financial methods of the revolution and the confederation; to the financial policy of the federalists and the republicans up to the war of 1812, including the refunding and payment of the debt, the internal revenue, and the banking and currency problems; to the financial history of the war with England; to the changes in the methods of taxation, and the crises of 1819, 1825, 1837; to the distribution of the surplus and the United States bank; to the currency problems up to the civil war; to the financial management of the war; to the methods of resumption, payment of the debt, national banks, currency questions, and problems of taxation; and finally to the recent development in national, state, and municipal finance and taxation.

*Industrial and tariff history of the United States* — The arguments of extreme free traders as of extreme protectionists are often so one-sided that an impartial judgment can be formed only through a knowledge of the actual effects of the tariffs. It is the object of this course to give a detailed history of each customs tariff of the United States from the very beginning, to describe the arguments of its advocates and of its opponents in each case; to trace as far as possible the position of each of the leading industries before and after the passage of the chief tariff acts, and thus to determine how far the legislation of the United States has developed or hampered the progress of industry and the prosperity of the whole country. Attention is called specially to the industrial history of the colonies; to the genesis of the protective idea and to Hamilton's report; to the tariffs from 1789 to 1808; to the restriction and the war with England; to the tariffs of 1816, 1824 and the "tariff of abominations" of 1828; to the infant-industry argument;

to the compromise and its effect on manufactures; to the era of moderate free trade; to the tariff of 1857; to the war tariffs; to their continuance, and to the pauper-labor argument; to the changes up to the present time.

*History and criticism of economic theories*—This course comprises two parts. In the first the various systems are discussed, attention being directed to the connection between the theories and the organization of industrial society. In the second, the separate doctrines—*e. g.*, of capital, rent, wages, etc.—are treated in their historical development. The first part is subdivided as follows:

- 1 *Antiquity*: Orient, Greece, and Rome.
- 2 *Middle ages*: Aquinas, Glossators, writers on money, etc.
- 4 *Mercantilists*: Stafford, Mun, Petty, North, Locke; Bodin, Vauban, Forbonnais; Serra, Galiani, Justi, etc.
- 4 *Physiocrats*: Quesnay, Gournay, Turgot, etc.
- 5 *Adam Smith and precursors*: Tucker, Hume, Cantillon, Stewart.
- 6 *English school*: Malthus, Ricardo, Senior, McCulloch, Chalmers, Jones, Mill, etc.
- 7 *The continent*: Say, Sismondi, Hermann, List, Bastiat, etc.
- 8 *German school*: Roscher, Knies, Hildebrand.
- 9 *Recent development*: Rogers, Jevons, Cairnes, Bagehot, Leslie, Townbee; Wagner, Schmoller, Held, Brentano; Cherbuliez, Leroy-Beaulieu, De Laveleye; Cossa, Nazzari, Loria; Carey, George, Walker.

*Communitistic and socialistic theories*—The present organization of society is attacked by socialistic writers, who demand many changes, especially in the institution of private property and the system of free competition. It is the object of this course to describe what these attacks are, what changes are proposed, and how far these changes seem desirable or possible. At the same time an account is given of actual socialistic movements, such as the international, social democracy, etc. Advantage is taken of these discussions to make the course really one on social science, by describing modern social institutions, such as private property, in their historic origin and development, and their present justification.

*Statistical science; methods and results*—This course is intended to furnish a basis for a social science by supplementing the his-



torical, legal, and economic knowledge already gained by such a knowledge of social phenomena as can be gained only by statistical observation. Under the head of statistics of population are considered: race and ethnological distinctions, nationality, density, city, and country, sex, age, occupation, religion, education, births, deaths, marriages, mortality tables, emigration, etc. Under economic statistics: land, production of food, raw material, labor, wages, capital, means of transportation, shipping, prices, etc. Under the head of moral statistics are considered: statistics of suicide, vice, crime of all kinds, causes of crime, condition of criminals, repression of crime, penalties, and effect of penalties, etc. Finally is considered the method of statistical observations, the value of the results obtained, the doctrine of free will, and the possibility of discovering social laws.

*Railroad problems; economic, social, and legal*—These lectures treat of railroads in the fourfold aspect of their relation to the investors, the employees, the public, and the state respectively. A history of railways and railway policy in America and Europe forms the preliminary part of the course. All the problems of railway management, in so far as they are of economic importance, come up for discussion. Among the subjects treated are: financial methods, railway construction, speculation, profits, failures, accounts and reports, expenses, tariffs, principles of rates, classification and discrimination, competition and pooling, accidents, employers' liability, etc. Special attention is paid to the methods of regulation and legislation in the United States as compared with European methods, and the course closes with a general discussion of state versus private management.

*Ethnology and social institutions of the people of the United States*—This course is an analysis of the ethnic elements in the population of this country, of the influences affecting the character of the people, and deals with certain social institutions that are neither purely economic, nor political, nor legal. It treats particularly of the effects of immigration in the past and at the present time.

An outline of the course is as follows:

- 1 The original ethnic elements in the population; the process of colonization; influence of climate and geographical position; influence of slavery; present distribution of population, by areas, by altitude, rain-fall, temperature, etc.



2 The elements added by immigration; history of immigration; political, economic and social effects of immigration; legislation restricting immigration, etc.

3 Social institutions and customs; marriage and divorce; poor relief and pauperism; charitable institutions, public and private; penology, prisons, convict labor; religious associations; social classes.

*Seminarium in political economy*—Outside of the regular instruction in political economy and social science, it is the intention to furnish the students of the school an opportunity for special investigation of economic and social questions under the direction of the professor. This is done by means of original papers prepared by such students as choose to engage in this work. The papers are read before the professor and the students, and are then criticised and discussed. The number of meetings and the topics to be discussed are determined each year.

## History of European law and comparative jurisprudence

### *History of European law*

BOOK 1. Primitive law: The following topics are discussed from the comparative standpoint: evolution of the primitive state; the sanction of law, the redress of wrongs in primitive society, and the evolution of criminal and civil jurisdiction and procedure; early family and property law. BOOK 2. Roman law: the national system (Royal and republican period.) The struggle between the orders and the development of a common law (12 tables). The leading principles and juristic technique of the national system (*jus civile*). BOOK 3. Roman law: the universal system. Chapter 1, Later republican period: The conquest of the entire civilized world, and the social, economic, and legal changes produced by the conquest. Reform of criminal law and procedure. The development of a universal commercial law by means of the pretorian edicts. The pretorian formulae of action. Chapter 2, Early imperial period: The empire under republican forms. Development of criminal and civil procedure *extra ordinem*. The classical jurisprudence. Chapter 3, Later imperial period: Social, economic, and legal decadence. Codification of the law by Justinian. BOOK 4. Medieval law: Chapter 1, German law: Character of early German law; the reforms of Charles the Great; maintenance of Carolingian institutions in

Normandy, and further development of these institutions in Norman England; general disappearance of the Carolingian institutions on the continent, and arrest of the legal development. Chapter 2. Roman law: Survival of the Roman law (1) in the Byzantine empire; (2) in the new German kingdoms, as personal law of the conquered Romans; (3) in the Christian church. Establishment and extent of the ecclesiastical jurisdiction; the development and the codification of the Canon law; influence exercised by this law upon the subsequent development of Europe. Revival of the study of the Justinian or Civil law in Italy; influx of foreign students. The theory of imperium continuum.\* Reception of the Justinian law in the German empire; partial reception in France and Spain; failure of the Roman law to gain footing in England. Influence of the Roman law in other countries: the "scientific" as distinguished from the "practical" reception. Book 5. Modern law: The reaction against the Roman law (1) among the people; (2) among the jurists; (3) in modern legislation. The great national codes of the 18th and 19th centuries. Relation of these codes to the Roman and German law.

*Comparative jurisprudence*—This course of lectures presents succinctly the leading principles of modern private law. The order of treatment is as follows: Book 1. Law in general: conception, establishment, and extinction, interpretation and application. Book 2. Private legal relations in general: nature of private rights; holders of rights (physical and juristic persons); establishment, modification, and extinction of rights (legal acts, illegal acts or torts, operation of time); enforcement of rights. Book 3. Legal relations concerning things. Book 4. Legal relations arising from executory contracts. Book 5. Family relations and guardianship. Book 6. Relations mortis causa (inheritance).

*International private law*—In this course the theories of the foreign authorities are noticed, and the practice of the foreign courts in the so-called conflicts of private law is compared with the solution given to these questions by our own courts.

*Seminarium for studies in comparative legislation*—The courses above described lay the basis for the comprehension of foreign legislations. The object of the seminarium is to train the student in the practical use of these legislations. Participation in the seminarium is optional. The work is to be done by the

students themselves, under the direction and with the assistance of the professor in this department. It is intended that they shall devote themselves to the study of questions of practical interest *de lege ferenda*, and that they shall collate and compare the solutions given to these questions in our own and in foreign countries.

### Diplomacy and international law

*The history of diplomacy from the peace of Westphalia to the treaty of Berlin* — The object of this course is to present, in their historical connection, the international treaties and conventions framed between these two periods, and to trace through them the development of the principles of international law. •

*International law* — In this course the principles attained through usage, treaty and convention are arranged in systematic form.

*Diplomatic history of the United States* — The purpose of this course is to treat primarily of the diplomatic history of Lincoln's and Johnson's administration. An outline and characterization of the policies of Marcy, Cass and Black will also be given.

### History of political theories

It is the purpose of this course to trace historically the development of ideas as to the origin, nature and limitations of governmental authority, from the primitive notions of primitive people to the complex and elaborate philosophical theories that have characterized the ages of highest intellectual refinement.

BOOK 1, after a short survey of the theoretical system of the Brahmans and the rationalistic doctrine of Confucius, treats mainly of the political philosophy of Greece and Rome, with special attention to the profound speculations of Plato and Aristotle.

BOOK 2 discusses the political doctrines of early Christianity and the Christian church, with the controversy of Papacy and Empire, and the elaborate systems of St Thomas Aquinas and his adversaries.

BOOK 3 treats of that age of renaissance and reformation in which Machiavelli and Bodin, Suarez and Bellarmino, Luther and Calvin worked out their various solutions of the great problem, how to reconcile the conflicting doctrines of theology, ethics and politics.

BOOK 4 covers the period of modern times, as full of great names in political philosophy, as of great events in political history. Here are examined the doctrine of natural law, as developed by Grotius and Puffendorf, the doctrine of divine right of kings with its corollary of passive obedience, as in Filmer and Bossuet, the theory of the constitutionalists, Locke and Montesquieu, the idea of social contract, made most famous by Rousseau, and the various additions to and modifications of these doctrines down to the present day.



## UNDERGRADUATE COURSES

FIRST YEAR		SECOND YEAR		THIRD YEAR	
Hours per week		Hours per week		Hours per week	

## REQUIREMENTS FOR GRADUATION

No student can be a candidate for any degree unless he has successfully pursued a course of undergraduate study in this college, or in some other maintaining an equivalent curriculum to the close of the junior year.

Students thus qualified, who shall satisfactorily complete the studies of the first year or their equivalent in the senior year in the School of Arts, shall be entitled, on examination and recommendation of the faculty, to receive the degree of bachelor of philosophy or the degree of bachelor of arts. The latter degree requires the concurrence of the faculty of arts, and is not conferred unless the student has taken courses in the first year of the School of Political Science, or courses in that year and in the senior year of the School of Arts, amounting to 15 hours a week.

Students of the school who have obtained the degree of bachelor of arts at this or at any other college maintaining an equivalent curriculum, and who are at the same time students in the School of Law, or who have pursued studies in the graduate department of philosophy, philology, and letters, to the amount of six hours per week, will, after passing satisfactorily through courses in the school, amounting to nine hours per week, be recommended by the faculty of the school for the degree of master of arts. The purpose of this provision is to allow students to pursue a course either mainly in law or mainly in economics. These courses may be continued through the third year, so that students who have obtained the degree of bachelor of arts are offered a two years' course in either law or economics. Students in the School of Political Science alone are required to pursue all of the studies of the second year, and to pass a satisfactory examination in them, in order to obtain the degree of master of arts.

Students in this school who are at the same time students in the School of Law, or who are taking at least six hours a week in the graduate departments of philosophy, philology and letters, who elect and satisfactorily complete courses in the third year of this school, embracing nine lectures per week, are entitled, on recommendation of the faculty, to receive the degree of doctor of philosophy. Students who are in this school only must take the entire work of the third year.

To obtain recommendation for the last degree, the candidate is required :

1 To prepare an original dissertation, not less than 20,000 words in length, on a subject approved by the faculty.

2 To defend such dissertation before the faculty.

3 To pass collateral examinations (reading at sight) on Latin and either French or German.

4 Candidates who have obtained the degree of bachelor of arts or bachelor of philosophy in this school, or bachelor of arts in this or any other college maintaining an equivalent curriculum, will be required to pass, further, an oral examination on their work in the last two years of the school ; candidates who have obtained the degree of master of arts from this school will be required to pass an oral examination on their work in the last year of the school. Candidates who have none of these degrees will be required to pass an oral examination on the entire work of the school.

The candidate for the degree of doctor of philosophy may present himself for examination at any time when the college is in session, excepting the month of June. The subject chosen by the candidate for his dissertation, which may be presented to the faculty before or after the examination on the work in the school, should be made known to the faculty at least four months before the proposed time of examination thereupon. A printed (or type-written) copy of the dissertation must be submitted to each member of the faculty at least one month before the day of such examination.

The successful candidate must present a copy of his dissertation to the college library.

All degrees awarded will be publicly conferred at commencement.

## BUILDINGS

(Facts not reported)

## CHAUTAUQUA UNIVERSITY

<sup>1</sup> COLLEGE OF LIBERAL ARTS

For historic sketch and trustees see Chautauqua University,  
p. 1346.

## ADMINISTRATION

First year of service in Chautauqua not reported.

Chancellor of the University, John H. Vincent, Buffalo.

Principal, William R. Harper, New Haven, Ct.

Treasurer, E. A. Skinner, Westfield.

Registrar, John H. Daniels, New Haven, Ct.

## INSTRUCTION

Figures in column at left give first year of service in Chautauqua and years spent in teaching.

Chancellor, John H. Vincent, Buffalo.

Principal, William R. Harper, New Haven, Ct.

1889 James J. Robinson, Ph. D. Latin, Shadyside Academy,  
5 Pittsburg.

B. A. Princeton 1884, M. A. 1888; Ph. D. Yale 1888; Professor of  
ancient languages, College of Montana 1884-6; Chair of  
Latin, Shadyside Academy, Pittsburg 1888-

1887 William E. Waters, Ph. D. Greek.

10 B. A. Yale 1878, Ph. D. 1884; Tutor, Yale 1881-4; Member  
American Philological Society, American Dialect Society;  
Joint author (with Professor W. R. Harper) Introductory  
Greek method.

Hermann J. Schmitz, M. A. German.

A. de Rougemont, M. A. French.

W. D. McClintock, M. A. English.

1887 E. H. Moore, Ph. D. Mathematics, Northwestern Uni-  
5 versity, Evanston, Ill.

B. A. Yale 1883, Ph. D. 1885; Instructor in mathematics, Pre-  
paratory school Northwestern University 1886-7; Tutor in  
mathematics, Yale 1887-9; Assistant professor of mathe-  
matics, Northwestern university 1889-; Member Connecti-  
cut Academy of Arts and Science, Circolo Mathematico di  
Palermo.

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<sup>1</sup> No fixed location; address the chancellor.



## 1890 E. Hershey Sneath, Ph. D. Mental and Moral Science.

- 5 B. A. Lebanon Valley College 1881, M. A. 1886; B. D. Yale 1884, Ph. D. 1890; Instructor in philosophy, Wesleyan University 1885-8; Instructor in philosophy, Miss Porter's School, Farmington, Ct. 1888—; Lecturer on history of philosophy, Yale 1889—; Editor Philosophical series published by Holt & co., Ethical series published by Ginn & co.

## Richard T. Ely, Ph. D. Political Economy, Baltimore.

B. A. Columbia, 1876, M. A. 1879; Ph. D. University of Heidelberg 1879; Fellow in letters, Columbia 1876-9; Professor of political economy, Johns Hopkins 1881—; Lecturer, Cornell 1881-3; Secretary American Economic Association since its organization; Member International Historical Association; Author French and German socialism, 1883, Labor movement in America, 1887, Taxation in American states and cities, 1888, Problems of to-day, 1888, Introduction to political economy, 1889, Social aspect of Christianity, 1889.

## 1888 Herbert B. Adams, Ph. D. History, Baltimore.

- 15 B. A. Amherst 1872; Ph. D. Heidelberg University 1876; Fellow in history, Johns Hopkins 1876-8; Lecturer on history, Smith College 1878-81; Associate in history, Johns Hopkins 1878-83; Associate professor of history 1883—; Corresponding member Massachusetts American Antiquarian and Berlin Historical Societies; American correspondent of Revue historique; Secretary American Historical Association; Editor of its published papers 1884—; Editor Johns Hopkins University studies in historical and political science, 1882.

## 1889 LeRoy F. Griffin, M. A. Physical Science.

- 25 B. A. Brown University 1866, M. A. 1869; Professor of science, New Hampton Institute, Fairfax, Vermont 1866-7; Principal Beverly (Massachusetts) High School 1867-71; Peabody Instructor, Phillips Academy, Andover, 1871-5; President Peddie Institute 1875-6; Professor of physical science, Lake Forest University 1878-90; Principal North Granville Seminary 1890—; Author Text-book on natural philosophy, Lecturer notes in chemistry, 1882, Peeps at Nature, 1882.

## 1887 Frederick Starr, Ph. D. Geology and Physical Geography.

- 10 B. S. Lafayette College 1882, M. S. and Ph. D. 1885; Teacher, Wyman Institute (Ill.) 1882-83; State Normal School, Pennsylvania 1883-84; Coe College, Cedar Rapids, Iowa 1884-88; Member American Society of Microscopists, American Association for the Advancement of Science, American Folk Lore Society; Corresponding member Davenport Academy of Natural Science, New York Academy of Science; Honorary member of New York Academy of Anthropology; Associate editor American Antiquarian; Author Ancient pictures for little moderns, On the hills, Iowa thunderstorm, 1889.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

Those desiring to take courses in Chautauqua College of Liberal Arts must present satisfactory evidence of proficiency, either by examination or approved certificate.

## COURSES OF STUDY

## Latin

- 1 Cicero; De senectute, A study of Cicero's writings.  
Livy — bks 1 and 21, A study of the Roman historians.  
Horace; Odes and Epodes; Horatian metres; Latin writing throughout the course.
- 2 Horace; Epistles and satires; His life and writings.  
Juvenal; Satires; Rome under the empire; Roman antiquities.  
Tacitus; Selections; Latin writing throughout the course.
- 3 Letters of Cicero and Pliny with reference to the light thrown by them on the history of their times.
- 4 Special courses :  
Roman oratory, reading Quintilian, Cicero and Tacitus.  
Roman philosophy, reading Cicero and Lucretius.  
Roman drama, reading Plautus and Terence.  
Tacitus; Annals and histories; A study of the Latinity of Tacitus, and the investigation of special historical topics suggested by him.  
Early Latin — A philological study of the language, based on the inscription as collected and edited by Mommsen and Ritschl.  
Prose composition; Jones' Latin prose composition complete.  
Prose composition; Work based on Collar's Latin prose composition, or on Arnold's prose composition.

## Greek

- 1 Homer; Odyssey; Two bks  
Demosthenes; De corona; Selected passages; Study of Greek political history and Athenian oratory  
Euripides; Alcestis, and study of Greek tragedy; Greek composition

- 2 Sophocles ; Œdipus Rex ; Study of history of Attic stage ; Plato ; Protagoras and study in philosophy of Platonic school

Thucydides — bk 7 ; Study of Greek historiography ; Greek composition

- 3 Æschylus — Agamemnon

Pindar's odes — Selections

Aristophanes — Clouds

Lysias — Portions and selections from Aristotle

History of Greek literature

### German

- 1 German syntax and reading of selected German poetry, and Schiller's Maid of Orleans ; German prose composition

- 2 Reading of selected dramas by Schiller, Wilhelm Tell, Lessing, Minna von Barnhelm, Goethe, Hermann and Dorothea ; Translation from English authors into German, and German into English

German prose composition

- 3 History of German literature ; German prose composition

### French

- 1 Practical syntax (wholly in French) ; Study of idioms begun ; Reading of modern authors, with synopsis

French composition

- 2 Study of idioms finished

Study of classical literature begun, with synopsis

Essays in French

- 3 Classical literature continued

Essays in French

### English

- 1 Rhetoric ; Genung's Practical rhetoric

Study of typical poems ; Hale's Longer English poems

Poets of the 18th century ; Ward's English poets, vol. 3

Shakspeare's plays — Macbeth — with constant reference to literary criticism

Collateral study will be conducted in the following subjects :

History of the English language ; Lounsbury's English language, first half

The English novel — using George Eliot's *Mill on the floss* as a basis

English prose literature, with special use of Addison's *Spectator*

2 Old English; Sweet's Anglo-Saxon reader

Poets of the 17th century; Ward's English poets, vol. 2

Special study of poetry in Milton's *Paradise lost* — bks 1 and 2, and in Shakspeare's *Hamlet* and *King Lear*

Collateral courses are offered as follows:

General study of the Elizabethan period; Saintsbury's Elizabethan literature

Study of the history of English grammatical forms; Lounsbury's English language, second half

English prose literature, with special use of Burke's speeches

3 Old English; Beowulf

Poetry from Chaucer to Donne; Ward's English poets vol. 1

English prose literature, its history and criticism; Minto's *Manual of English prose literature*

Chaucer, Prologue

Collateral courses are offered as follows:

Old English grammar with constant use of Cook's translation of Seiver's *Grammar of old English*

English romantic poetry — using selections from Thomson, Cowper, Burns and Wordsworth

Spenser — *The fairie queene* — bks 1 and 2

### Mathematics

1 Geometry and algebra

Wells' geometry; Solid geometry, three books, with solution of exercises

Wells' University algebra; Summation of infinite series, logarithms, general theory of equations; a review of the most important of the preceding chapters

2 Trigonometry

Wells' plane and spherical trigonometry; Applications



## 3 Analytic geometry

Bowser's Elementary treatise on the analytic geometry of the plane, with an introduction to geometry of three dimensions

## 4 Differential and integral calculus; Bowser's treatise, with practical applications

**Mental and moral science**

1 Psychology; The object of this course is a careful study of the phenomena of consciousness. Text-book: Sully's Outlines of psychology. Brief course of collateral reading is required, consisting of Lotze's Outlines of psychology, translated by Ladd, Ward's article on Psychology in the Encyclopædia Britannica, and Ribot's German psychology of to-day, translated by Baldwin.<sup>1</sup>

2—Ethics—for beginners; Text-book: Porter's Elements of moral science; Brief course of collateral reading is required, consisting of Hopkins' Outline study of man, and Fowler's Progressive morality.

3 Ethics—advanced course; A more exhaustive study of the psychological and philosophical basis of morals, together with a history of ethical theory; Text-books: Wilson and Fowler's Introduction, Fowler's Principles of morals, and Sidgwick's Methods of ethics and history of ethics.

4 Introduction to philosophy; For those who have studied psychology and ethics, and are desirous of studying philosophy; Text-book: Stuckenburg's Introduction to philosophy; Collateral reading, hereafter suggested, is required.

5 History of philosophy; A brief survey of the rise and development of philosophic thought from its beginning to the present; Text-books: Zeller's Greek philosophy and Schweigler's history of philosophy with references to Zeller's larger works on Greek philosophy, Ueberweg's History of philosophy and Erdmann's History of philosophy.

1—Each course consists of 40 recitations; 2—A special course in pedagogics may be offered.

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<sup>1</sup> A course in Physiological psychology is offered to those who complete course 1. Text-book: Ladd's Elements of physiological psychology.

## Political economy

### 1 Principles of political economy

General principles and historical outline of political economy, including a treatment of questions of the day in their ethical, political and economic bearings

Indispensable books—Ely's Introduction to political economy, John Stuart Mill's Principles of political economy (unabridged), J. B. Clark's Philosophy of wealth, R. T. Ely's Labor movement in America and Problems of to-day, R. E. Thompson's Protection in home industry, H. C. Adams' Relation of the state to industrial action, J. K. Ingraham's History of political economy

### 2 Revenues and expenditures of governments

This includes local, state, and national finance. Careful comparative and historic studies are made of taxes and other kinds of revenue.

Indispensable books—R. T. Ely's Taxation in American states and cities, H. C. Adam's Public debts, Woodrow Wilson's Congressional government, A. J. Wilson's National budget, Chalmers' Local government, U. S. finance reports

## History

### 1 The beginnings of history and civilization

Primitive society, Ancient Egypt, Chaldea, Assyria, New Babylon, the Medo-Persian empire, Phœnicia, and Israel

Books required: Keary's Dawn of history; Rawlinson's Egypt; Ragozin's Chaldea, Assyria, Media, etc.; Rawlinson's Phœnicia; Hosmer's Jews

### 2 The results of history in the 19th century

Germany, France, Spain and Portugal, England, Russia and the Eastern question

Book required: Müller's Political history of recent times (1816-1875)

Books recommended: Lodge's History of modern Europe; McCarthy's History of our own times; Mackenzie's History of the 19th century; Fyffe's History of modern Europe.

### 3 Church history and European civilization

Book required: Fisher's History of the Christian church

Books recommended: Lecky's History of European morals; Emerton's Introduction to the middle ages; Guizot's Lectures on European civilization; Stillé's Studies in medieval history

#### 4 American history

Books required: Johnston's History of the United States; (Scribner's reprint from the Encyclopædia Britannica), Johnston's American politics

Books recommended: Frothingham's Rise of the republic; Fiske's War of independence; Fiske's Critical period of American history; Schoaler's History of the United States, American statesmen series

Course 1, 2, 3, or 4 may be taken independently. Each course requires eight months' study of prescribed topics and monthly written examinations. One essay upon an elective topic is expected in the course of the year. Each course in reading may be supplemented by lecture courses at Chautauqua in the school of history.

### Physical sciences

- 1 General course — Griffin's Natural philosophy, Avery's Chemistry; Sections 1-3
- 2 Advanced Physics — Atkinson's Ganot's Physics; Lommel's Light; Lardner's Electricity
- 3 Astronomy — Newcomb's Popular astronomy
- 4 Theoretical chemistry — Avery's The metal; Remsen's Organic compounds; Wortz's The atomic theory
- 5 Analytic chemistry — Simmon's Qualitative analysis; With qualitative analysis of 50 salts and quantitative analysis in gravimetric way; 10 determinations

### Geology and physical geography

- 1 General course — One term's work in each of three subjects, geology, mineralogy, and botany; Text-books: Dana, Crosby, Gray
- 2 General geology — LeConte's Elements; Two terms; Geology of the state
- 3 Historic geology — Dana's Manual and Nicholson's Ancient life history

#### 4 Mineralogy — Dana's Manual and determinative work

Special courses will be arranged for those who complete the above work.

### Biology

#### 1 Huxley and Martin's Elementary biology

Martin and Moale's Dissection of fish; Dissection of chelonian; Dissection of bird; Dissection of rat

Gray's Botany

#### 2 Gray's Structural botany, Goodale's Physiological botany, Darwin's Fertilization of orchids; De Candolle's Origin of cultivated plants

### Preparatory courses

In order to accommodate those who are not able to enter the college courses above specified, preparatory courses are conducted. These also are the work, or cover the work, required for admission to the college courses. In preparation for the courses leading to B. A. the following are prescribed: Four in Latin, three in Greek, one in English, two in mathematics. For admission to the courses leading to B. S. Greek is not required, but the preparatory work in French or German and Latin is required. A good knowledge of the history of the United States is also expected.

#### LATIN

#### 1 Cæsar's commentaries — bk 1. Instruction sheets of this course based on Harper and Burgess' Inductive Latin method

#### 2 Cæsar's Commentaries — bks 2, 3, 4

Jones' Latin prose composition — lessons 1 – 20; Subjunctive mood; word formation

Leighton's Roman history; To Punic wars

#### 3 Cicero's Orations against Cataline, Archias, and Pompey's military command

Jones' Latin prose composition — lessons 21 – 40; Word formation; Synonyms

Leighton's Roman history — completed

#### 4 Virgil's Æneid — bks 1 – 6

Prosody, mythology, Latin writing

General review of Latin grammar



## GREEK

- 1 Xenophon's *Anabasis*; bk 1, with special drills in grammar and elements of Greek composition; Harper and Waters' *Inductive Greek method*
- 2 Xenophon's *Anabasis*; Two or three books with exercises in memorizing of words and drills in Greek composition
- 3 Homer's *Iliad*; Three books with exercises and drills in word memorizing, scansion and the principles of Homeric verse; Rewriting of portions of Homer into Attic prose

## GERMAN

- 1 Elements of German language; Declensions; Conjugations of verbs in the present tense; Comparison and regular construction of clauses  
Translation from English into German, and exercises in German composition  
Schmitz's *Elements of the German language* — part 1
- 2 Reading of selected *Märchen*  
Special work on grammar and idioms; Conjugation of regular and irregular verbs  
Translation from English into German and further work in German composition  
Schmitz's *Elements of the German language* — part 2

## FRENCH

- 1 Elements of the language; Readings and drill so directed that the student may begin at once to acquire the power of expressing himself, both orally and in writing, in French; Study and use of regular and reflexive verb  
Books: *Elements de Français* — part 1; *Anecdotes nouvelles*
- 2 Reading and drill; Elements (natural) grammar; Study and use of irregular verbs; Writing of letters in French  
Books: *Elements de Français* — part 2; *La France*; *L'Amérique et les Américains*

## ENGLISH

- 1 Bain's *Higher English grammar*, Kellogg's *Rhetoric*, Beer's *English literature*, Irving's *Sketch book*, Goldsmith's *Vicar of Wakefield*, Shakspeare's *Merchant of Venice*, Ward's *English poets*, vol. 4

## MATHEMATICS

- 1 Arithmetic and algebra — White's Complete arithmetic; Wells' University algebra, through the discussion of the binomial theorem
- 2 Geometry  
Wells' Geometry; the five books of plane geometry, including the solution of numerous exercises

## REQUIREMENTS FOR GRADUATION

Curricula leading to bachelor of arts and to bachelor of science are offered. For each degree 10 courses are prescribed, and six are elective.

After admission the following is prescribed for the degree of bachelor of arts — one course in each of the following subjects: Greek, Latin, mathematics, English, German or French, history, psychology and ethics, political economy, physical sciences and biological sciences. The additional six courses may be chosen from the courses announced under the various departments, subject only to the rules governing elective courses.

After admission the following is prescribed for the degree of bachelor of science — one course in each of the following subjects: Latin, English, German, French, history, psychology and ethics, political economy, geology, physical sciences, biological sciences. The privileges and requirements of the six additional courses are the same as those for the degree of B. A. above.

Not more than two courses may be chosen from one department of study.

The student's choice of electives may be indicated one course at a time as he may prefer, but when once made it may not be changed.

More than two courses may be pursued by students wishing special preparations in certain subjects, though only two will be counted toward a degree.

In taking more than one course in a subject the student must proceed in order from one upward, so that the subject may be developed naturally.

## BUILDINGS

(Facts not reported)

## ADDITIONAL INFORMATION

In this, the first statement required by the new law, it will not be out of place to describe briefly the whole Chautauqua system as it exists, although technically only a small part could be included in a university report.

The function of Chautauqua in the educational system of the United States is compensatory and supplementary. It could not, if it would, supplant or compete with institutions of the conventional type; it strives to do work which they either can not do or have not attempted. The effect of the Chautauqua methods has been to increase the interest of the people in college and university work. The principle now so generally accepted, that education is the privilege of all, young and old, rich and poor, that mental development is only begun in school and college, and should be continued through life, underlies the Chautauqua system.

*The Reading Circle*—The first difficulty met in any plan for popular education (as distinct from public schools) is the apathy of the out of school multitudes. It is one thing to devise a system, quite another to set it at work. The attempt to overcome this inertia by means of home reading circles was first made by Chautauqua in 1878, and since that time fully 180,000 have been enrolled. It is a sad comment on human perseverance that only 12 per cent of that number have completed the four years' course, yet on the other hand, each one of these readers has devoted the spare hours of at least one year to the reading of good books.

Judged by what was attempted, the Chautauqua Circle has done great service in disseminating good literature, and inducing people to read it systematically. The device of a four years' course, including in general the subjects taught in college, the plan of classifying the readers who join in any given year, the appointing of "Memorial days," and the bestowing of certificates at the completion of the course, all create a sentiment and enthusiasm which, if important to resident students, are all the more needed by those who, isolated in the routine of a busy life, pursue self-imposed tasks.



The essentials of the Reading Circle plan are these:

(1) A four years' course of reading, including selections in English from the ancient classics, history, literature, science and art. Each year of the four is devoted specially to a great nation, and is known as the "Greek year," "Roman year," "English year," or "American year." No attempt is made to study language or mathematics. The course is general, and follows in a measure the subjects taught in the average college.

(2) Certain books, many of them specially prepared by well-known authors, are designated each year by a council of six prominent men.

(3) A monthly magazine, "The Chautauquan," contains supplementary articles on the subjects of the course, by leading writers of the day, general miscellaneous matter on current affairs, and several departments designed to aid the reader, such as an apportionment of the course by the week and month, notes on the books, outlines of reading, word studies, etc.

(4) A membership book, sent to each reader, includes analyses of the required books, and question papers (memoranda) to be filled out and returned to the office. The papers are intended to aid the reader in reviewing and systematically arranging the facts and principles he has learned. They are not examinations, nor are they regarded as such.

(5) Local circles may be formed in any community where three or more readers desire the benefits of comradeship. There are about 2,000 such circles now in active life.

(6) A certificate is granted at the completion of the course to all who report themselves as having read the required literature. The certificate states only this fact, and has not the remotest connection with a degree.

This first step in the Chautauqua system fails unless it leads people to continue the habit of reading. Therefore, a large number of advanced courses, prepared by specialists, are offered. The four years' course is general, and enables the reader to find a congenial subject for further and particular study. These advanced courses meet this demand for specialization.

*Other circles*—There is a Young Folks' Reading Union, which encourages among youth the reading of the best books, and a Teachers' Reading Union, with three years' course in professional lines.



*The Summer Assembly*, in July and August of every year, is planned in accordance with the principle followed by the Reading Circle. For the many there are popular lectures, concerts, entertainments; for a somewhat less number there are philosophic, scientific and literary lectures in progressive courses; for the comparatively few are provided means for careful study under able and well-known instructors. The Chautauqua Assembly should be judged not by its recreative exercises, but by its educational classes. The former attract the crowds, from which the latter are recruited, and the revenue from the many supports the higher departments.

*Other assemblies*—Of the 50 other assemblies in various parts of the United States, it may be well to say that they sustain no organic relation to the original Chautauqua. Many of them are closely modeled after the parent assembly, others have simply taken the name and adopted a part of the plan, usually the so-called “popular features” which are chiefly important as a source of revenue. For any shortcomings of these independent assemblies Chautauqua should not be held responsible.

*Higher educational work*—The plans so far described, can not, in conformity with conventional ideas, or with the best standards, be called higher education. They promote the interests of higher education, but should be neither overvalued nor underestimated. We have traced the system to the point where ambitious and thorough readers, or students with a six weeks’ summer vacation, wish to undertake advanced study of a thorough character.

The College of Liberal Arts is in session for six weeks at Chautauqua, and carries on correspondence work during the winter. It offers courses in 12 departments. The instructors are all professors or teachers from academies, colleges or universities of good standing.

The theory of the summer session is not that a language can be mastered in six weeks by some rapid method, but that by concentration of attention on one, or at the most two subjects, very decided progress is possible. For example, a sophomore in the average college recites three times each week in Greek, or in a term of three months he recites 36 times. A Chautauqua student who gives himself up to Greek, reciting twice a day, or 10 times a week, for six weeks, will accomplish in one subject nearly two ordinary terms’ work. The progress, of course, is limited to one study but the gain both from actual accomplishment and from

economy of attention, is far from insignificant. For six weeks this department offers college privileges; recitation rooms, laboratory, reference library, contact with capable and live instructors, to two classes:—(1) Those who can not attend other institutions for a longer period; (2) Teachers who wish to observe the best methods of instruction put into actual practice. Through the latter class this summer college exerts a wide and helpful influence.

*Other departments*—The Teachers' Retreat, a school of pedagogic principles and methods, the School of Sacred Literature for the study of the Bible, both in the original and in translation, and the many classes in Art, Industrial Training and Physical Culture.

*The correspondence department* of the college directs the home study of its members in all academic branches. In many instances the same professor is in charge of the summer teaching and winter correspondence of his department. It is not claimed that this method is equal to personal contact between pupil and teacher. There is a loss which can not be compensated, unless the correspondence student can attend the summer classes. Yet by devoting more time to the work than the student in residence gives, the persevering and conscientious non-resident student may acquire mental discipline and knowledge which deserve recognition. There are at present 357 students enrolled in the correspondence department. Candidates for a degree must follow the curriculum laid down, and must pass a rigid, personally supervised examination in each study. Up to this time only one degree (Ph. D.) has been conferred under the university charter, and this was given only after searching examination, and on the recommendation of all the instructors under whom the recipient had studied. No honorary degree has been or can be conferred under the rules of the trustees. Those who have the interest of Chautauqua in charge, stand for the principle that conscientious non-resident work ought to be recognized, but that the reward, to be a true prize, must be held above reproach.

*The extension of university teaching* has been brought prominently before the people by Chautauqua. For three years university extension courses have been given at Chautauqua, and a few local courses have been carried on under the auspices of Chautauqua College.

Chautauqua did not seek a charter for the sake of specious dignity and authority. It has been conservative and conscientious in using its power. This principle, for which Chautauqua

stood eight years ago, has been recognized by the University of the State of New York, which now offers degrees on examination to non-resident students. The extension of this policy on the part of colleges and universities generally, may eventually relieve Chautauqua of this responsible work, which is fraught with the danger of misconstruction and misrepresentation.

All statistics are here given because not complete enough to be included in table 3.

### Classification of students

#### BY COURSES

English .....	94	Political economy.....	13
German .....	72	Physical sciences .....	12
Mathematics .....	35	Journalism .....	9
Greek .....	26	Mental and moral science..	6
French .....	23	Geology .....	4
History.....	13	Unclassified .....	7
		Not accounted for .....	46
Total reported.....			<u>360</u>

#### BY RESIDENCES

New York.....	84	Arkansas .....	7
New Hampshire.....	1	Tennessee .....	2
Vermont .....	2	Kentucky .....	2
Massachusetts .....	15	Ohio .....	28
Connecticut.....	10	Indiana .....	8
Pennsylvania.....	42	Illinois .....	21
New Jersey .....	12	Wisconsin .....	2
Delaware .....	2	Minnesota .....	4
Maryland.....	1	Iowa .....	11
District of Columbia.....	5	Missouri .....	7
West Virginia.....	1	Kansas .....	21
North Carolina.....	2	Nebraska.....	2
South Carolina.....	1	Colorado .....	1
Georgia .....	4	Utah.....	2
Florida.....	2	Nevada .....	4
Alabama .....	5	California .....	11
Mississippi .....	4	British America.....	16
Louisiana .....	1	Asia (Japan).....	1
Texas .....	2	Not accounted for .....	14
Total reported.....			<u>360</u>

# GRAND CONSERVATORY OF MUSIC OF THE CITY OF NEW YORK

16 E. 23 st., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

23 My 1884 Legislature incorporated the Grand Conservatory of  
Music of the City of New York.

## TRUSTEES

President, Ernst Eberhard M. D. 16 E. 23 st.

Treasurer, George H Cameron, 434 W. 22 st.

Secretary, James J. Milliken, 1164 Broadway

Samuel Bernstein

Asa Heineman

Frank Roosevelt

George W. Skellen

P. D. Strauch

## APPOINTED DURING YEAR

John R. Graham, jr

## VACANCIES

Henry C. Appleton, resigned 5 Je 1890

## ADMINISTRATION

Figures in column at left give first year of service in Grand Conservatory of Music.

1874 President, Ernst Eberhard, 16 E. 23 st.

Mus. Doc. Grand Conservatory of Music 1884; Author Grand conservatory method for piano, Grand conservatory course of studies, Grand conservatory course of technics; Editor New organist.

1884 Treasurer, George H. Cameron, 434 W. 22 st.

## INSTRUCTION

Figures in column at left give first year of service in Grand Conservatory of Music and years spent in teaching.

1874 President, Ernst Eberhard, 16 E. 23 st.

38 See also "Administration."

Dr Wm Mildner. Lecturer on the History of Music.

Educated at Princeton.



H. N. Bartlett. School for Piano, Organ, Harmony, Composition and Instrumentation.

1886 Carl Figue. School for Piano, 587 Pacific st., Brooklyn.

6 Composer Rheingold, Summer sketches, Quartette for piano and strings in *E* minor, Nocturne and humoresque for Orchestra, Easter cantata, Variations on "Theme" by Bach, Elegy and scherzo for pianoforte.

William Medorn. M. M. School for Piano, Organ, Harmony, Composition and Instrumentation.

George C. Muller. School for Piano.

1884 Bodo Von Mauderode. School for Piano, 16 Livingston pl.  
28

H. T. Seifert. School for Piano.

1885 Emil Steiger, B. M. School for Piano, Harmony, Com-  
12 position and Instrumentation, 231 E. 33 st.

B. M. Grand Conservatory of Music 1886.

1883 Whitfield Ward, M. D. Lecturer on Physiology and Care of  
15 the Voice, 128 E. 36 st.

B. A. Columbia 1871; M. D. Bellevue Hospital Medical College 1874; Clinical Assistant, London Throat Hospital 1876; Surgeon, Metropolitan Throat Hospital, 1877-87; Author The throat in relation to singing, 1878, Singers' throat troubles, 1883, The singing voice and its preservation, 1889, Health talks with singers, 1885.

1888 Americo Gori, A. E. Vocal Instructor, Composer, Musical  
20 Critic, 50 E. 29 st.

A. E. Royal Conservatory of Florence 1880; Sub-master of thorough bass, Conservatory of Florence 1873-6; Director, Choral School of Royal Theatre of La Pergola, Florence 1877-9; Vice-president and instructor, Orfeo Choral Society; Director, Cocchiare Society Florence 1878-80; Repetitor, Imperial Italian Opera, St Petersburg 1882-5; Musical editor and critic American musician.

Felix Jager. School for the Voice.

O. Lingarini. School for the Voice.

1874 Francesco Tamburello. School for the Voice, 16 E. 23 st.

17 Studied at Beethoven Conservatory, St Louis, New England Conservatory, Petersilea Academy of Music. Author Grand conservatory vocal course.

- 1878 George W. Morgan. School for Organ, 219 W. 34 st.  
 45 Composer Morning service for Episcopal churches, Christmas cantata.
- 1886 Howard E. Parkhurst. School for Organ, School for Harmony, Composition and Instrumentation, 16 E. 23 st.  
 10 George F. Bristow. School for Harmony, Composition and Instrumentation.  
 Carl Hamm. School for Violin.  
 Phil. Herfort. School for Violin.
- 1890 Augustus A. Wolff. School for Violin, 212 W. 123 st.  
 10 William Muller. School for Violoncello.  
 Henry Schroeder. School for Violoncello.  
 Mme Bertucca Maretzek. School for Harp.  
 A. H. Toulmin. School for Harp.
- 1881 Meritz Werner. Instructor on Flute, School for Orchestral  
 20 Instruments, 234 E. 86 st.  
 H. Stowasser. Instructor on Oboe, School for Orchestral Instruments.  
 J. Kilian. Instructor on Clarionet, School for Orchestral Instruments.  
 H. Breitschuck. Instructor on Bassoon, School for Orchestral Instruments.  
 Charles Devide. Instructor on Zither, School for Orchestral Instruments.
- 1876 Henri Marcel. Guitar, Mandolin, etc., School for Orchestral  
 15 Instruments, 20 W. 32 st.  
 F. Schreiher. Instructor on Cornet, School for Brass Instruments.  
 A. C. Hall. Instructor on French Horn and Saxaphone, School for Brass Instruments.  
 James Marshall. Instructor on Euphonium, School for Brass Instruments.  
 Edward Thorburn. Instructor on Trombone, School for Brass Instruments.  
 Hugo Milde. Instructor in German, School for Foreign Languages.  
 Alfred M. Cotte. Instructor in French, School for Foreign Languages.

Giovanni Massa. Instructor in Italian, School for Foreign Languages.

1884 R. D. de la Cortina, M. A. Instructor in Spanish, School  
10 for Foreign Languages, 111 W. 34 st.

M. A. University of Madrid; Author Cortina method (for Spaniards); Cortina method (English Spaniards); Cortina method (French Spaniards); Después de la lluvia el sol, El Indiano, Verbos españoles, Modelos para cartas.

F. F. Mackay, School for Elocution and Dramatic Art.

1887 Appleton Park Lyon, M. A. School for Elocution and  
30 Dramatic Art, 180 Fifth av.

B. A. Amherst 1870, M. A. 1872; Union Theological Seminary 1870-3; Professor of mathematical and physical sciences, National Normal University, (Lebanon, Ohio) 1861-6.

J. A. Keenan. School for Elocution and Dramatic Art.

1883 F. Townsend Southwick. School for Elocution and Dramatic  
8 Art, 31 W. 55 st.

Professor, American Academy of Dramatic Art, Lyceum Theatre; Director, Priest's School of Oratory; Author Primer of elocution and action.

1888 Mary Wilford. School for Elocution and Dramatic Art, 206  
6 S. Eighth st., Brooklyn.

Professor of elocution in the following institutions: Holy Cross Academy, Holy Cross Male School, Holy Cross Female School, St Bernard's Male School, St Bernard's Female School, St Patrick's School, Cathedral School, New York, St Mary's Academy, St John's Male School, St John's Female School, St Stephen's School, Assumption School, St Joseph's Academy, St Charles' School, St Paul's School Brooklyn.

Henry Gebhard. Instructor in Physical Culture.

1886 H. Maurice Friedlander. School for Drawing and Painting,  
7 3 E. 14 st.

Gold medal, Academy of Fine Arts, (Vienna) 1877; Painter, Court of Duke Philipp of Sax-Coburg-Gotha 1881; Silver medal, Academy of Fine Arts (Vienna) 1883; Author Art in America, 1887, Art in spiritualism and religion, 1889.

F. Ch. Stecher. School for Drawing and Painting.

## HONORARY DEGREES

B. M.—Emil Steiger .....	New York
M. M.—William Medorn .....	Pelhamville
Otto Hackh .....	Brooklyn
Mus. D.—Ernst Eberhard .....	New York

## COLLEGE APPOINTMENTS

(None)

## PRIZES, SCHOLARSHIPS AND FELLOWSHIPS

	Value
Gold medal for excellence in piano playing, donated by Hugo Sohmer, Edward Westbrook .....	\$75
Gold medal for excellence in singing, donated by Napoleon J. Haines, Henriette Dreyer .....	50
Scholarship donated by the Grand Conservatory of Music of the City of New York, Albert Burgemeister .....	1,000

## REQUIREMENTS FOR ADMISSION

(None reported)

## COURSES OF STUDY

The curriculum is divided into two departments—the amateur and the artists' departments—the one designed for those who study music only for their own pleasure and that of their friends; the other for those who intend to make it the profession of their life.

## THE PIANO FORTE

The text-books used in this department are Course of studies, of which 12 books are now in use, and Method for the piano in two parts.

## THE VOICE

The school has adopted, in addition to the regular course, a system devised and designed to meet the following conditions:

*First*—Independence of pronunciation from the vocal organ.

*Second*—Clearness and distinction of articulation.

*Third*—Equality in the sound of the voice on all the notes of the scale, and on all the vowels and syllables.

*Fourth*—The faculty of connecting the notes in pronouncing the different syllables, in all the intervals of the scale, without interrupting the sound of the voice.



The result of this system has proved that pupils taught by it can carry their voices with better quality, and enunciate more clearly, and that the fullness of the singing tone is made very much stronger.

Lectures on the physiology and care of the voice, by Dr Whitfield Ward are free to students.

#### OPERA

The school affords complete instruction in modern opera.

In addition to the careful training of the voice, in its production and development, all the stage action and business is carefully attended to, and rehearsals are given with orchestral accompaniment. Operas thus studied are performed at the grand conservatory matinees, on the conservatory stage, which is provided with the necessary scenery, thus giving the students an opportunity to become familiar with stage business.

#### ORGAN

Particular attention is paid to a systematic study of obligato pedal playing, to the art of registration, to the art of accompanying, to the art of improvising, and to a thorough knowledge of harmony and counterpoint.

#### HARMONY AND COMPOSITION AND INSTRUMENTATION

Amateurs are not expected to pursue this study in the higher branches, but all who desire to know what they are doing, practically, in music, should attend the harmony class.

#### VIOLIN

Instruction is given also on the violin, violoncello, harp, orchestral instruments and brass instruments.

#### FOREIGN LANGUAGES

In order to make the study of these languages interesting as well as thorough, the directors have secured the services of native professors.

#### ELOCUTION AND DRAMATIC ART

A two years' professional course of seven hours weekly is given. Examinations are held for 10 days previous to the beginning of the course, and the principal may be consulted daily during the first three weeks of September. Private lessons may be had at all times.

Lectures and talks on expression are a feature of the course, and a series of readings by eminent artists will be given during the year.

#### DRAWING AND PAINTING

Under the charter and subject to its provisions, an art school has been established. In this school the following course of study has been adopted :

1—All beginners copy from the best examples of well-known masters, ancient and modern. All such as have made themselves proficient in copying are entitled to enter the second class. 2—Object drawing. Pupils in this class having sufficiently advanced are promoted to the third class. 3—Drawing. 4—Lectures on perspective. 5—The decorative arts. 6—Class of composition. 7—Modeling in clay and wax. 8—Drawing and painting from living models. 9—Drawing for casting in metal. 10—Lectures on chiaro-oscuro. 11—Landscape and marine painting. 12—Architecture.

#### REQUIREMENTS FOR GRADUATION

Students who may pass the required examination, and who may produce a composition for voices with accompaniment for the organ or pianoforte, containing polyphonic writing (fugue in four parts), will be granted the degree of bachelor of music.

The degree of master of music will be granted to those who may be able to pass a satisfactory examination in canon, fugue, etc., in addition to the requirements for the degree of bachelor of music, and who can produce a work for chorus and orchestra. A comprehensive knowledge of musical history and acoustics, and ability to work out a thesis on some musical subject will also be expected of applicants for this degree.

The degree of doctor of music will be conferred on artists whose long and devoted services in their art may seem to justify or demand a recognition as exalted as the directors have in their power to grant.

When the student completes the course in drawing and painting he is given the degree of bachelor of fine arts, which is followed, after additional study, by the degree of master of fine arts and doctor of fine arts.

#### BUILDINGS

The institution owns no buildings ; the rent paid is \$2,146.

## NEW YORK COLLEGE OF MAGNETICS

78 E 10 st., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
28 Ja	1887	Chartered under general law. Certificate filed in Secretary of State's office.

## TRUSTEES

President, F. G. Welch, M. D.

Secretary, Edwin D. Babbitt, M. D.

S. H. Brown, M. D.

J. W. Currier

Judge Albert Day

L. Wesley Frost

M. L. Holbrook, M. D.

## ADMINISTRATION AND INSTRUCTION

First year of service in College of Magnetism and years spent in teaching not reported.

Dean, Edwin D. Babbitt, M. D.

Studied at Knox College; M. D. American Eclectic College, Cincinnati; Author Light and color, Human culture and cure, etc.

## HONORARY DEGREES, ETC

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

## COURSES OF STUDY

1 — *Magnetism* and the philosophy of the fine forces, including atomic and chemical action, heat, electricity, ferro-magnetism, animal magnetism, psycho-magnetism, etc., together with the general explanation of nervous, vascular, pathological and psychological phenomena.

2 — *Solar magnetism and chromopathy*, or the application of light and color to the cure of disease; also the law for determining the chemical and therapeutical power of all substances by their color. Aided by the spectroscope, a new materia medica is thus to be given to the world.

8—The scientific application of water, air, etc., for the cure of disease.

## ADDITIONAL INFORMATION

In attendance during year, men.....	21
women .....	9
	<hr/>
	30

Tuition fees for course.....	\$50
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19 My 1887 Legislature incorporated with power to confer degrees.  
The institution is coeducational. Its object is to  
promote manual and industrial education. It was  
named for its founder, Charles Pratt of Brooklyn.



## TRUSTEES

President, Charles Pratt

Secretary and Treasurer, Frederic B. Pratt

Charles M. Pratt

## ADMINISTRATION

First year of service in Pratt not reported.

President and Treasurer, Frederic B. Pratt

Secretary and Director of Department of Commerce, Norman P. Heffley

Director of Technical High School Department, William O. Pratt

Director of Art Department, Walter S. Perry

Director of Department of Domestic Science, Harriet S. Sackett

Director of Department of Mechanic Arts, Charles R. Richards

Director of Libraries, Margaret Healy

Director of Music Department, John J. Dawson

Director of Technical Museum, J. Francis Williams

Secretary to Art Department, Harriet M. Cox

Secretary to Department of Domestic Science, Ada A. M. Pratt

Secretary to Department of Mechanic Arts, Edwin W. Foster

Librarian, Eulora Miller

Assistant Librarians, Agnes E. Little, Mary C. Mosman, Sophia L. Bacon, L. Atalanta Ramsdell, Happy E. Branch, Susie S. Hawkins, Annie McKenzie, Julia C. Sturges, Elizabeth B. Faucon, Charles Burbank, Helen F. Aitken, Elise M. Pfau

Book-keeper, Lily Norton

Assistant Book-keepers, Jenny B. Murphy, George J. Morgan

Stenographer and Type writer, S. Louise Girod

Buyer, William H. Dutcher

Superintendent of Buildings and Restaurant, Frank M. Black

Assistant Superintendent, Sarah E. T. Black

Engineer, Joseph Foster

## INSTRUCTION

First year of service in Pratt and years spent in teaching not reported.

Frederic B. Pratt.

Charles M. Allen Instructor in Physics and Chemistry

James R. Campbell, Instructor in Literature and Political science

M. Elizabeth Vandercook, Instructor in English and History  
Frank V. Johnson, Instructor in Mathematics  
Walter V. Holt, Instructor in Elocution  
Lucy A. Fitch, Instructor in Antique, Anatomy, Color, Costume  
Class  
Mary Allis Hurlbut, Instructor in Free hand drawing, Sketching,  
Color  
Katherine E. Shattuck, Instructor in Free hand drawing, Nor-  
mal Class instruction  
Edith S. Copeland, Instructor in Free hand drawing  
George A. D. Tew, Instructor in Technical and applied design  
C. Frank Edminster, Instructor in Architectural drawing  
J. Frederick Hopkins, Instructor in Mechanical drawing,  
Instrumental perspective  
Horatia B. Cunningham, Instructor in Wood-carving  
Lina Eppendorff, Instructor in Art-needlework  
Frances Haynes, Instructor in Clay-modeling  
S. Herbert Adams, Instructor in Advanced Clay-modeling, Life  
work  
Charles A. Mead, Assistant in Mechanical drawing  
Harriette B. Bowdoin, Assistant in Free hand drawing  
Florence Walker, Assistant in Free hand drawing  
Emma R. Drill, Assistant in Free hand drawing  
Nellie Campbell Bedford, Instructor in Cookery, Normal  
Class  
Isabel D. Bullard, Instructor in Cookery  
Margaret T. Hammond, Instructor in Cookery  
Helen M. Burgess, Instructor in Dressmaking  
R. Alice MacPhee, Instructor in Dressmaking  
Albina D. Wilson, Instructor in Dressmaking  
Addie Louise Mead, Instructor in Dressmaking  
Effie King, Instructor in Millinery  
Clara B. Dewey, Instructor in Millinery  
Eunice R. Campbell, Instructor in hand and machine Sewing,  
Garment Making  
Clara Trumbull, Instructor in Sewing  
Elizabeth P. Loomis, Instructor in Household economy, Laundry  
Glentworth R. Butler, Instructor in Hygiene and Home-nursing  
Aletta V. W. Schenck, Assistant in Dressmaking  
Elizabeth McJunkin, Assistant in Dressmaking

Kate M. Clements, Assistant in Dressmaking  
Minnie Oliver, Assistant in Millinery  
Elizabeth A. Heath, Assistant in Millinery  
Eliza Lee Johnson, Assistant in Sewing  
Lulu N. Esmond, Instructor in Phonography  
Arabel Gillespie, Instructor in Phonography  
George S. Dixon, Instructor in Phonography  
Frank W. Stanley, Instructor in Phonography  
Thomas P. Heffley, Instructor in Typewriting  
Emma B. Ludlow, Instructor in Typewriting  
Lillie J. Hooker, Assistant in Music  
William C. Drake, Instructor in Woodworking  
William McMullen, Instructor in Foundry work  
Alfred Sweeney, Instructor in Forging  
John J. O'Rourke, Instructor in Forging  
George H. Meserole, Instructor in Tinsmithing  
Henry C. Brown jr, Instructor in Machine Shop Work  
Frank C. Sanborn, Instructor in Mechanics  
Charles H. Tiedman, Instructor in Carpentry  
William Rea, Instructor in Machine Shop Work  
John F. McCauley, Instructor in Bricklaying, Plastering  
John J. Ford, Instructor in Bricklaying  
Matthew C. Ogden, Instructor in Plumbing  
Edward Van Horn, Instructor in Plumbing  
William J. Hutcheson, Instructor in Stone Carving  
P. William Nelson, Instructor in Fresco Painting  
Thomas Taylor, Instructor in House Painting  
Thorburn Reid, Instructor in Electrical Construction  
J. Francis Williams, Director of Technical Museum  
Albert A. Hopkins, Assistant in Museum.

### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

### REQUIREMENTS FOR ADMISSION

Except in special cases, students are not admitted to any of the departments of the institute under the age of 14 years.

Applicants for admission to the art and normal classes, and to the classes in architecture and design must pass an examination

in the elements of free hand drawing ; and in addition, applicants for the normal course must be more than 16 years of age, and must present a satisfactory statement, letter or certificate in regard to general scholarship. Students entering the day classes in either architectural or mechanical drawing must be well grounded in high school studies.

Applicants to the dressmaking class must be at least 16 years of age and must have successfully completed the first and second terms of the sewing course, or must submit samples of their work which prove their knowledge of hand and machine sewing and their ability to make simple garments and cambric dresses from pattern.

Applicants to the millinery class must be over 16 years of age and must have a knowledge of hand sewing. Pupils are required to complete satisfactorily the first course, or pass an equivalent examination, before entering the advanced classes.

Applicants to the book-keeping class must be at least 17 years of age and must pass a satisfactory examination in arithmetic, penmanship and spelling.

Applicants for evening classes in the trade school must be between 18 and 23 years of age.

## COURSES OF STUDY

### Art department

The object of the art department is to give thorough instruction in free-hand drawing and color, architectural drawing, mechanical drawing, technical and decorative design, clay-modeling, woodcarving and art needlework ; and also to provide the best facilities for the training of teachers of industrial art.

The department occupies 15 studios and rooms specially fitted for the requirements of the various classes.

The school is planned for those who wish to pursue, thoroughly and systematically, any branch or division of art work, and the courses of study are arranged to meet the requirements of three classes of pupils : those who give to the work five days each week ; those who give but two or three afternoons ; and those who give but three evenings. Students are not allowed to omit any part of a course of study unless they can present similar work, and pass satisfactory examinations on the same.



## MORNING CLASSES

*Five days each week*

The morning classes are for those who wish to pursue a regular course of two years or more in any branch of work given in the courses of study.

## AFTERNOON CLASSES

*Five afternoons each week*

Afternoon classes in free hand drawing, wood carving and art needlework, are for the accommodation of students who find it impossible to attend the morning session.

The courses of study are similar to those of the morning classes, but of necessity are abridged. Every effort, however, is made to adapt the work to the needs of the individual pupil.

A special class for teachers in public schools meets one afternoon each week for instruction in form-study and drawing. The instruction is in accordance with the official course in form-study and drawing adopted by the Department of Public Instruction of the State of New York.

## EVENING CLASSES

*Three evenings each week*

Classes in free hand drawing, architectural drawing, mechanical drawing, decorative and applied design, clay modeling and wood carving, pursue courses of study similar to those of the day-classes, but which, on account of the limited time, are less comprehensive. The work in free hand drawing is carried on in two divisions; one includes cast drawing, light and shade and free hand perspective, and the other free hand drawing and applied design. During the second term a course in mathematics may be taken in connection with either architectural or mechanical drawing.

## ADDITIONAL CLASSES

Pupils from the technical high school department meet for instruction one hour each day and pursue a course of study in free hand, architectural and mechanical drawing, design, clay modeling and wood carving.

Students in the day millinery and dressmaking classes of the department of domestic science receive one lesson each week in free hand drawing and color, the work enabling them to sketch

drapery and various combinations of material in a free and effective manner.

All courses of study here printed are first given complete as planned for and carried out by morning classes, which meet five days each week. All other classes meeting for a shorter time pursue similar but abridged courses.

#### REGULAR ART COURSE

*Five days each week — three years*

The regular art course is for those who wish thorough training in light and shade drawing, color, perspective, etc., with work from the antique and from life. Many drawings are required under each subject of the course of study, the number depending on individual ability and application. From time to time examinations and test exercises are given to determine the progress made, and when a certain subject or grade has been satisfactorily completed, students are allowed to proceed to the next. Each week throughout the course students are required to hand in sketches for general class criticism. During the first year the study is directed principally to the choice of picturesque subjects, to perspective, broad effects of light and shade, and to the handling of simple mediums. In more advanced work, sketching is considered in its relation to illustration and composition. Students of the advanced classes also meet two afternoons every week to sketch from the costumed model.

In connection with the courses of study, lectures are given on the following subjects: Perspective, design, harmony of color, historic ornament, artistic anatomy and the history of painting.

#### *Synopsis of course*

Cast drawing in outline and in masses of light and shade; cast drawing from ornament in values; free hand perspective, perspective problems and sketching; still life groups in light and shade; cast drawing — masks and heads in outline and in masses of light and shade; details of human figure; principles of design and decoration illustrated in color; history and application of ornament; heads shaded in values; instrumental perspective; painting in oil and water color; study of artistic anatomy; study of the antique in outline, and light and shade; drawing from life — head and costumed figure; figure from life; clay modeling from the antique, and from life (optional).

## NORMAL ART COURSE

*Five days each week — two years*

The normal art course of two years aims to give pupils a training which shall qualify them to fill positions as teachers and supervisors of drawing in public and private schools.

The course of study comprises the first 10 subjects of the regular art course, as printed above, including the work in sketching and the lectures on perspective, harmony of color, historic ornament, and design; together with the following five subjects, and work in normal methods, extending throughout the two years:

Clay modeling; water color; elements of architectural and mechanical drawing; applied design; study of plant forms and their adaptation to ornament; wood carving (optional).

After completing the two years' course, the students may take an advanced special course and become qualified as instructors in higher grades of work.

## CLAY MODELING

The work of the classes in clay modeling is in four divisions:

The first is intended to supplement free hand drawing from the antique and from life and to provide training for those who wish to make a specialty of advanced work in clay. Pupils begin by modeling in the round, then in relief and advance to study from life. Students who wish to enter at once on work from the figure are required to bring satisfactory drawings or modeled studies of the head or figure.

The second is for pupils of the normal class who are instructed in the modeling of type forms, fruit, etc., and are otherwise prepared to teach elementary clay work in connection with drawing in the public schools. The course includes modeling from casts and photographs, time sketches from plant forms, and original designs for relief ornament.

The third is planned to meet the requirements of pupils in the architectural and the wood carving classes and also those of the technical high school. The students model from casts and from plant forms, and study concretely the principles of decorative design as applied to stone, wood and metal work.

The fourth is for pupils of the evening classes, and the course is designed to give artistic training which shall be specially adapted to meet the needs of artisans and designers in silver,



brass, iron, stone, wood and the numerous other branches of manufactured work to which modeled ornament is applicable. Students take a preliminary course in free hand drawing, design and modeling from casts, and then advance to the particular line of ornamentation in which they desire special training. The course includes the principles of form and proportion involved in designs of various kinds, and the adaption of modeled ornament to different surfaces.

Students of the evening classes who can present work showing necessary qualifications may enter at once on the study of the antique in clay. A life class will be formed if applications warrant such organization.

#### WOOD CARVING

*Five days each week — two years*

The course in wood carving meets the needs of those who desire not only knowledge of technical methods in wood carving and in the handling of tools, but also a knowledge of free hand drawing, design, clay modeling, and the principles of good construction. The students may also take a course in light carpentry or cabinet work.

Beginning with surface carving for some simple object, the pupils advance to frames, panels, cabinet work and furniture, originating and applying their own designs.

The afternoon and evening classes are specially designed to accommodate students of the normal class, teachers and pupils from other schools, and those students who can not pursue as comprehensive a course as is planned for morning classes.

The parallel course is necessarily abridged for pupils in the afternoon and evening classes.

#### *Synopsis of course*

Preliminary exercises, care and use of tools; plane and curved surface carving; diaper carving; horizontal and vertical lines of decoration; incised model carving — conventional and naturalistic treatment; low relief, half relief, high relief — flat and curved surface — conventional and naturalistic treatment; letters and inscriptions; cabinet work in some historic style; sculptured ornament — conventional and naturalistic treatment; use of oils, stains and varnish in finishing woods.



Students will pursue the following parallel course of study :

Free hand and mechanical drawing ; elements of ornament, lines, geometric forms, leaves and flowers and their use in decoration, original designs for surface covering and borders ; historic ornament and original design in historic styles ; drawing from plant forms, and adaptation of plant and animal forms to ornament ; clay modeling.

#### APPLIED DESIGN

*Five days each week — two years*

The course in design provides thorough instruction in the principles of decorative design and in the technical methods of practical application, and aims to fit pupils to become professional designers. Pupils having acquired proficiency in the underlying principles of all good design may make a specialty of any one subject.

The course of study for the evening classes contains as much of the subjects printed below as is necessary to secure good drawing and an understanding of the general principles of decoration. It then becomes of the special character most helpful to those students who wish to supplement their daily occupation by study of the principles of design as applied to different materials.

#### *Synopsis of course*

Free hand drawing ; elements of ornament ; skeleton plans and pattern analysis ; original designs in outline from given motives ; preparation of colors, and harmony and contrast of color in applied designs ; original designs in color for tiles, etc. ; original designs in historic styles, in color ; study of plant forms and their adaptation to ornament ; foliage from nature in flat washes of color ; original designs in color from plant forms ; designs for prints, book covers, etc. ; designs for wall papers ; designs for carpets ; decorative designs and schemes of color for rooms ; problems in decoration.

#### ARCHITECTURAL DRAWING

*Five days each week — two years*

The course equips the student as a thorough and practical draughtsman, and furnishes him with a foundation in science and art from which advance may be made to a comprehensive knowledge of architecture.

The work of the evening classes includes much of the course of study printed for the day classes, with the exception of the parallel course, and is planned to meet the wants of those who wish to learn how to make and to read drawings relating to house construction. The advanced course includes perspective and building design.

### *Synopsis of course*

Geometric solids, plans and elevations; geometric problems, surface developments and intersection of solids; framework, joints, etc.; sections through partitions, doors and windows; plans and elevations of cottage; framing plans of cottage; details of frame house; scale drawings of buildings from measurements and sketches; construction of foundations, chimney, etc.; construction of arches, buttresses, etc.; plans and elevations of brick or stone house; sections of house and details; staircase and details; fireplace and details; original designs for frame house — plans, elevations and perspective; original designs for brick or stone house — plans and elevations; original designs for various details; problems in construction; problems in design and composition; problems, strength of materials; etc.

Students also take the following parallel course in free hand drawing, perspective, history of architecture, etc., and throughout the course make use of text-books.

Free hand perspective, light and shade drawing, pen and pencil sketching; instrumental perspective, projection of shadows and isometric drawing; design and decoration; historic styles of architecture and ornament; clay modeling.

### MECHANICAL DRAWING

#### *Five mornings each week — two years*

The course includes, with the practice in drawing, the study of geometry, principles of construction, machine design, metallurgy, properties of materials, etc., and prepares students to become competent mechanical draughtsmen.

Students taking the evening course omit the five parallel subjects; and though the work is not as comprehensive as that planned for the day classes, owing to limited time, it includes many of the same subjects, and extends over two years of class work.

*Synopsis of course*

Principles of working drawings, simple projections, and use of instruments; geometric problems; machine details from models; machine details from sketches; screws, bolts, and nuts; free hand working drawings; development of surfaces and intersection of solids; pulleys; couplings; pillow block and hanger; cams; gearing; crank; strap end; eccentric; slide-valve action; assembly drawing; shop drawing; distribution of power; problems in construction,— machine design.

Students also pursue the following parallel course :

Free hand drawing and perspective; principles of design; metallurgy; elements of mechanism; properties of materials.

## ART NEEDLEWORK

The course includes free hand drawing and that work in embroidery which best illustrates the principles of design in decorative needlework. Pupils are required to work the different stitches on samplers, and afterward to apply them to special pieces of embroidery for which they make their own drawings. As pupils become familiar with the various stitches, and learn to draw and to adapt designs easily, they may make a specialty of white work, color work or ecclesiastical work.

Talks are given on historic ornament and the use of various materials as applied to general house decoration.

Students entering the morning classes must be at least 16 years of age and able to sew neatly. The afternoon classes which meet for two lessons each week and the evening classes meeting for three lessons, are for students whose time is limited, or who can not pursue as comprehensive a course as planned for morning pupils. Children who can sew neatly and can do the work necessary for a just appreciation of the subject, will be admitted to the afternoon classes, or to the Saturday morning class.

*Synopsis of course*

*White work*— Drawn work, Roman lace, and lace stitches; laid work— scallops, initials; flannel work, and half solid work, white silk on linen.

*Decorative color work*— Outline work with tapestry staining; Kensington work— solid and half solid; Spanish laid work;



appliqué, on laid, and underlaid; tapestry stitches; conventional and naturalistic treatment of plant forms.

*Ecclesiastical work* — Work on fine linen; couching with silk or gold thread; Kensington work.

### Department of domestic science

It is the purpose of the department of domestic science to afford girls and women opportunities for such training as will best supplement the education usually gained in their school life, and better prepare them to make homekeeping the high art that it should be. To this end, courses of instruction in cooking, household economy, laundry work, hygiene and home nursing, plain sewing, millinery and dressmaking have been established and systematically graded.

The courses are designed to be so thorough that those who successfully complete the advanced work in any department, except that of hygiene and home nursing, may possess the theoretical and practical knowledge requisite to enable them to become skilled workwomen when the necessary work-room experience has been gained, and the names of such pupils are furnished to those desiring to employ workwomen.

The library forms an important factor in the usefulness of this department; many books are shelved permanently in the department itself, while many more are at the disposal of the student in the library, where lists are constantly prepared, and subject material arranged for the pupils.

In all branches of instruction there are morning, afternoon, and evening classes. Evening classes are for those whose duties prevent attendance during the day. The courses of study are the same, so far as the limited time permits.

The number of pupils in each class is limited that all may have opportunity for practical work under the direction of the teacher.

### COOKERY

Each class receives one lesson of two hours' duration weekly. Materials are furnished free of charge and the dishes made are tested by the pupils at the close of each lesson. The full course consists of two graded courses — the first covering a period of six months, the second three months. The instruction in the first includes all the fundamental principles of cooking.



The object is to familiarize the pupils with the most healthful, attractive, and at the same time economical methods of preparing such articles of food as are found on a well appointed home table. In connection with every lesson a brief talk is given by the instructor on the chemical and nutritive properties of the materials used, the changes produced by cooking, etc., in order that the pupil may not only be able to prepare all varieties of wholesome and appetizing dishes, but may also have a knowledge of the properties of the different food materials and their values as nutritive agents, and thus be capable of choosing intelligently the several dishes for suitable menus. Once a term pupils are required to bring in a bill of fare for a week's breakfasts, luncheons and dinners, which can be purchased at a minimum cost.

There is also a practical lecture on "How to buy meat," which is illustrated by a butcher who cuts, before the class, sides of beef, mutton and pork.

In the second course more complicated cooking is undertaken, combining and elaborating the principles taught in the first. Pupils are instructed in the preparation and cooking of richer soups, roast meats and game, with the accompanying gravies, sauces, and vegetables; also entrées, croquettes, and salads, which increase the varieties of food, and utilize the materials often wasted. In addition to this, several lessons are devoted to cooking and serving in proper form a breakfast, luncheon and two dinners.

Pupils who have satisfactorily completed the first and second courses, and passed the written and practical examinations, will receive a certificate. The practical examination consists of test-dishes made at home and brought for inspection, and the cooking and serving of a dinner of five courses.

*Normal course* — The special purpose of this is to train teachers of cooking.

Pupils are admitted in September. The class is limited to 12. Those desiring to enter must have a practical knowledge of cooking, and must present a satisfactory statement or letter in regard to general scholarship. The course covers one year, five days each week, and includes, besides a thorough course in cooking, instruction in physiology, chemistry of cooking, normal methods and practice teaching.

*Cooking for invalids* — The course has been approved by several leading physicians, and is especially designed for nurses and others desiring to learn to cook for the sick. It includes

Meat extracts, broths, gruels ; soups, beverages ; dishes daintily prepared and served to convalescents.

*Fancy cooking* — This is intended for those who have already a practical knowledge of cookery, but who desire to learn to make entrées, salads and dainty desserts. The lesson will be of three hours' duration and pupils will be allowed to select the dishes they desire to learn.

*Saturday morning class* — Classes meeting on Saturday morning, will be organized for schoolgirls between 12 and 16 years of age.

The work of these classes is of the same nature as that above described for the first course, but is somewhat modified.

*Evening classes* — In all the courses there are evening classes for those who can not attend during the day.

#### HOUSEHOLD ECONOMY

This course comprises a series of 12 lectures intended to give instruction in practical housekeeping and is designed to teach young girls and women how to manage homes of their own, or to take charge of other homes as professional housekeepers. As far as is possible, practical demonstrations are given in the various branches of the work.

#### *Synopsis of course*

Choosing a home, sanitation, ventilation, heating ; care of cellar, stoops, sidewalks, and back yards ; kitchen work, with care of utensils ; laundry ; arrangement of work and furnishings ; dining-room and butler's pantry ; drawing-room and halls ; sleeping, guest and sick-rooms ; store-room and linen closet ; house-cleaning ; social side, courtesy and entertaining ; household accounts ; mistress and maid.

#### LAUNDRY

The course covers three months, and includes instruction in the simple chemistry of cleansing clothing and household linen and the practical application of these principles in washing, removing stains, starching, and ironing.

Pupils are expected to bring clothes to launder in class.

Special instruction in ironing will be given to those who do not care to take the course in washing. These pupils will be required to bring the articles prepared for ironing.

#### HYGIENE AND HOME NURSING

Three courses, each consisting of 12 lectures, of one hour's duration, constitute the full course in hygiene and home nursing.

In these courses the work of bandaging, artificial respiration, applications of splints, lifting helpless patients, preparing and applying poultices, is done by the pupil under personal supervision of the instructor until a reasonable degree of proficiency is attained.

*First course*—Heart, and circulation of the blood; general direction of main arteries; various bleedings and ways of arresting them; immediate treatment of those suffering collapse from injury or fainting and of those apparently drowned, or otherwise suffocated; immediate treatment of burns, scalds, wounds and bruises; observing and recording pulse, respiration, temperature; furnishing, warming and ventilating the sick-room; bathing, dressing, and administering food and medicines to patients; practical bandaging, bed-making, lifting and propping helpless patients.

*Second course*—Prevention and management of bed sores; treatment of fevers, bathing, sponging, diet, use of disinfectants; nursing special diseases, care of children, immediate treatment of fractures, sprains, unconsciousness, epilepsy, hysteria, poisonous bites, sunstroke, frost bite, poisons and their antidotes; practical preparation and application of poultices, blisters, and stupes; packs and vapor baths; carrying the sick and injured.

*Third course*—Hygiene of infancy and childhood—growth, food and artificial feeding, teething, clothing, exercise, etc.; outlines of physiology and hygiene for adults, care of eyes, ears, skin, digestion, and lungs, illustrated by rough dissection of animal heart, lungs, and eye.

It is intended to include some points in house sanitation and drainage.

#### SEWING

The complete course includes three graded courses of three months each, two lessons a week. In connection with each course there are talks on the various materials used, with hints as to



judicious purchasing. There is in the class room for the inspection of the pupils a collection of samples of the different kinds and qualities of materials used.

*The first course* is devoted to the rudiments of plain hand-sewing, beginning with the threading of the needle, making knot and use of thimble. The various stitches are practiced until they are fully learned on small pieces of calico and muslin.

*Second course* — Machine stitching; cutting white skirt by measure; making skirt with or without ruffle; cutting under-waist from pattern, basting, stitching, felling and trimming; cutting and making a simple cambric dress from pattern, with straight-gauged skirt, and a blouse or plaited waist without lining.

To enter this course the pupil is required to be familiar with all the stitches used in hand sewing. A certain amount of sewing is required to be done at home.

*Third course* — Fine hand sewing; making all kinds of undergarments and baby linen; advanced machine work.

This course is intended for those who have completed the second course, and desire to perfect themselves in fine sewing and garment-making, and in repairing, with a view to using their skill at home or professionally.

Those who have satisfactorily completed the three courses, and have made without assistance a baby's fine dress and lady's cambric sack, will receive certificates.

#### DRESSMAKING

The complete course is systematically graded and comprises three courses of three months each. There are three lessons a week, two devoted to practical work and one to free hand drawing and design.

As a part of each course, talks are given on hygiene, the selection of fabrics and form and harmony of color in dress, in order that the pupil may gain a knowledge of design and the ability to originate and make tasteful garments.

A parallel course in drawing, under the direction of the art department, forms a part of the dressmaking course. This is in three grades, beginning with pencil practice and ending with colored drawings of tasteful dresses and is designed to train eye and hand and to enable pupils to sketch their own models.



*The first course* is designed to instruct those who have a fair knowledge of hand and machine sewing and the making of simple dresses, in the best method of making from pattern and finishing tasteful, close fitting dresses of wool or cotton. This is the foundation of all good work. Pupils are shown a variety of materials, and are instructed in regard to the texture, color and suitability of each for different uses and people. The principles of cutting skirts from measure and of neatly finishing and hanging them are taught.

The talk on form treats of the most becoming manner of making a dress by adapting lines of the material to the lines of the figure and selecting trimmings suited to the material and to the character of the figure.

*Second course* — Applicants must complete the first course, or submit a dress of their own making and pass an examination on the first course.

The course is intended for those having a thorough knowledge of finishing and making wool dresses by pattern, who desire to learn cutting and fitting from measure either for home or professional use. Much time is given to practice in taking accurate measures as the basis of perfect fitting garments.

Instruction is confined entirely to the drafting and fitting of waists, in order to make the work as practical as possible. Constant practice at home in drafting is required. Several waist linings are fitted; and two basques, one of plain, and one of striped or plaid material, are completed.

*Third course* — This is designed for those pupils who have satisfactorily completed the second course, to instruct them in the making of more complicated dresses, embodying artistic lines and harmony in coloring.

#### MILLINERY

In this branch of the department there are three graded courses, each covering a term of three months, three lessons a week — two in practical work and one in free hand drawing and design.

Talks are given in connection with each course on the suitability of materials, combination of colors and character of lines and form as essential to artistic millinery.

A parallel course in drawing under the direction of the art department is a part of the instruction in millinery. It is designed to train the eye and hand, thus enabling pupils to sketch

their own models, and is in three grades, beginning with pencil practice and ending with colored drawings of trimmed hats.

*The first course* consists of instruction in the methods of making the various facings and edges used on the brims of large hats and trimming with suitable bows. The method of making plain covered hats is also taught.

*Second course*—Practice in making various kinds of bonnets, using cotton flannel and sateen, forms the first part of this course. Afterwards those pupils who desire to become professional milliners are instructed in making bonnets of crape and silk, while the others apply the principles to a bonnet of nice colored materials. Practice work on toques and turbans and its application to a hat of nice materials complete the course.

*Third course*—Throughout this course pupils work in nice materials to gain confidence and experience. Each pupil makes three or four hats for herself or friends, suited in style and materials to the season in which the course is given, i. e., velvet, crape and feathers in winter; net, lace edge, flowers and ribbon in summer.

Those pupils receive a certificate who satisfactorily complete the three courses, and make for inspection, without assistance, four hats, viz.: Large net hat; lace edge bonnet; large velvet hat; crape toque.

### Department of commerce

The course will comprise book-keeping, mathematics, commercial law and geography, penmanship, correspondence, phonography, typewriting, English, and one or more modern languages, as German and Spanish. At present instruction in this department is confined to phonography, typewriting, English and book-keeping. Lectures are given at stated intervals on the subjects taught in the department.

#### PHONOGRAPHY AND TYPEWRITING

No student under the age of 17 is received, nor any who can not pass an examination in composition and spelling.

The time required to become proficient in phonography depends on the ability and application of the student. The usual length of time required to write rapidly enough to fill a position as an amanuensis is about nine months, which would also include the preparation necessary to become a competent typewriter.

These two studies — phonography and typewriting — although totally different in character, are so closely allied in practice that a knowledge of both is requisite, and the aim is to give persons desiring to become amanuenses a thorough practical training in these branches. Day and evening instruction is given in both phonography and typewriting. Evening students can pursue but one study at a time; day pupils may take both, although it is not generally advisable for them to take typewriting at the same time they are pursuing the elementary course in phonography.

### *Phonography*

The system taught is the Benn Pitman system and is divided into three grades: elementary, intermediate and advanced. Each grade covers a term of three months. Two lessons per week are given in each grade; frequent reviews and examinations are given; pupils desiring to enter succeeding grades are obliged to pass an examination on the work of previous grades.

Certificates are granted those who have acquired ability to write, at the rate of 100 words a minute for ten consecutive minutes, matter that has not previously been written by them, and to correctly transcribe the same.

*Elementary grade* — This is sufficient for the attainment of a thorough knowledge of the principles of shorthand, so that practice alone is necessary to secure accuracy and skill. The work is slightly modified for evening students, on account of the limited time usually at their disposal outside of class hours. Students are required, from the beginning, to read back all matter taken by them from dictation.

*Intermediate grade* — Instruction in this grade consists of a thorough review and amplification, when necessary, of the previous grade, especially of the reporting word-signs, contracted words and contracted and special phrasing. The chief instruction, however, consists of dictation in correspondence relating to all kinds of commercial enterprises, reading exercises and transcription of notes.

*Advanced grade* — This is devoted exclusively to a systematic drill in writing from dictation, business correspondence, law, legislative and general matter. Special attention is paid to speed practice and the proper transcription of matter as to form, expression, punctuation, capitalization, etc.



### *Typewriting*

Instruction is given on the Remington machine, although pupils are taught on any of the standard machines desired. Humphrey's manual of typewriting is used as a text-book, which is supplemented by other works, and by specially arranged material.

Certificates are granted pupils who can correctly copy new matter at the rate of 40 words per minute, for 10 minutes.

Morning and afternoon classes meet every day; evening classes meet Monday, Wednesday and Friday of every week.

The course in typewriting covers a period of three months, but as personal instruction is given, each pupil advances as rapidly as his ability permits.

#### BOOK-KEEPING

The science of book-keeping or accountantship in its broadest sense is the basis of all business and all business education. Arithmetic, commercial methods, penmanship and language are but necessary auxiliaries.

Classes meet on Monday, Wednesday and Friday evenings of every week.

Instruction is given in a practical system of double entry, and forms of correspondence. The student is also made familiar with business terms, transactions, etc.

### Department of mechanic arts

Instruction in this department deals with two classes of work — educational and trade work.

#### MANUAL TRAINING

The general plan of instruction is as follows: the instructor first executes the lesson before the whole class; the proper method and the principles involved are carefully explained, and the applications of the exercise in practical work are pointed out. Each pupil then takes up the work, and the instructor gives individually what further advice or correction is necessary. Accurate working drawings of the exercise are used wherever it is possible.

#### *First year*

*Bench work* — The pupil is first taught the use of the saws, planes, and chisels, and the proper methods of laying out work. When some command of the tools has been acquired, the different



joints used in carpentry and cabinet work are made and lastly, a few constructive pieces are executed, viz.: a small paneled door, window sash, dovetailed box, etc.

*Turning* — The work in turning embraces straight, shoulder, and molded center turning, in both hard and soft woods. Grace of outline and beauty of form are specially considered and practice in design is given by requiring certain pieces to be worked out by the pupils.

*Spinning* — The elements of metal spinning are next taken, and type forms of bowls, cups, vases, etc., are worked out in thin sheet metal.

*Pattern making* — The operations of molding are first explained to make clear the function of draft, halving, cores, etc., and then patterns are prepared for some of the pieces to be used later in the machine shop, after which more difficult pieces, involving core boxes, are executed.

Accompanying the shop work of the first year, lectures are given on the following subjects: The action of cutting tools; growth of trees; distribution of lumbering forests; process of lumbering; commercial classification of woods; specific properties and applications.

### *Second year*

*Molding* — In this shop, the patterns prepared in the previous year are first used and by their use the operations of two-part molding, coremaking and three-part molding are taught. The greater part of this work is done at the bench with small patterns, but the principles of swept up work and handling of larger pieces is illustrated by operations on the floor. Later, some ornamental pieces are molded and cast in bronze and the process of making moldboards from the object is explained. Casting in plaster from clay models is also taken at this stage.

*Forging* — The care and management of the fire are first explained and then the operations of drawing, upsetting, forming and welding in iron are practiced in a series of exercises, many of which serve simply to illustrate principles, while others deal with such constructions as hooks, bolts, shackle, chain, swivel, hinge, tongs, etc. Afterwards, working in steel is practiced and sets of chisels and lathe tools are made and tempered. To gain an exact idea of the treatment of the piece before dealing with the hot iron, many of the exercises are first executed in lead. The course is

completed by some project in ornamental work which involves many of the elements previously brought out.

*Tinsmithing*—The course involves the preparation of different metals for hard and soft soldering, practice in soft soldering, brazing and the laying out and forming of simple pans, pipes, cups, elbow joints, etc. The development of surfaces in some of these pieces brings out very forcibly the principles previously met with in the drawing-room.

### *Third year*

*Machine-shop*—The bench-work course consists of chipping, surface filing, straight, parallel and round fitting; the making of calipers, try square, inside and outside gauges or sheet steel; and the use of taps and dies.

Before commencing the tool course, an explanation of the construction of the lathe and other tools is given, and the theory of cutting tools is analyzed. The first part of the course gives practice in plain and taper turning and fitting, screw cutting, etc., after which are exercises introducing various operations on the different machines, and finally, the making and finishing of taps, twist drills and reamer. After this course several projects to illustrate principles in electrical construction are taken, and models of galvanometers, rheostats, voltmeters, ammeters, dynamos and motors are made.

In this year, instruction is given in the theory of mechanism and the elements of machine design. This is followed by the study of strength and resistance of materials and work in the testing laboratory.

The theory of the steam engine, involving combustion of fuels, distribution of heat and the action of steam is studied and a short course in metallurgy, illustrating the different processes of making iron and steel, is given.

*Afternoon classes* for pupils of other schools are held twice a week in several of the above subjects. The object is the same educational purpose involved in the high school work.

### TRADE SCHOOL

The instruction aims to give a thorough grounding in the principles of a mechanical trade and sufficient practice in its different

operations to produce a fair amount of hand skill. This end is reached by giving a careful explanation of the reason of each step, by means of frequent lectures on materials and methods and by the use of manuals; and as all the details of the work are studied and systematized, progress is accordingly rapid. The school does not pretend to turn out journeymen mechanics, but to afford a training which further practice in active work will perfect.

Work has thus far been confined to evening classes, which meet three times a week. It is proposed, however, to add day classes in each branch.

All courses are at least six months in length and no applicants will be admitted, except to the machine-shop, later than two weeks after the beginning of the term. All tools and materials are supplied without charge.

*Carpentry* — Practice is first given in the use of saws, planes, chisels and laying out tools and is followed by a thorough course in joint work. After this elementary practice and when some mastery of the tools has been gained, a model of a frame house is made and the different methods of framing illustrated. Afterwards, partitions are set and bridged and floors laid. Door and window frames are made and placed in the partitions, which are sheathed, clapboarded, shingled and corniced. Lastly, inside trimming is taken up; doors, sashes and shutters are made and hung; wainscoting, base boards and stairs built; etc.

Constant practice is given in the use of working drawings and in laying out work from plans.

*Blacksmithing* — The instruction includes care and management of fire, operations in drawing, upsetting, forming, and welding iron, and making and tempering steel tools. The exercises mainly represent useful pieces of work. Several complete designs in ornamental work are executed.

*Machine-shop* — Two years' course — Bevel, surface and key-way chipping are first practiced; then the class is put on straight surface filing until ability to file straight and true is obtained, after which follow straight, tongue, round and dovetail fitting, free hand filing, filing to templet, making calipers, square, bevel and gauges in sheet steel, use of taps and dies and practice in scraping.

The tool work gives practice on the engine lathe in plain and taper turning, outside and inside screw cutting and fitting; after



this, exercises are introduced in hand turning and varied practice on the planing machine, shaper, drills, milling machine and grinding machine. The theory of cutting tools is analyzed and the construction of the different machines explained.

*Brick-laying* — The men are first taught to handle the trowel and to spread mortar; practice is then given in building eight, 12 and 16 inch walls, with square and blocked ends and with returned corner; afterward, arches in walls of the same size are taken up and later, flues, fire-places, setting sills, and corbeling.

At first each man works on a separate section of wall and no attempt is made to do rapid work; but towards the end of the course a number of men are placed side by side on a long wall and greater speed is attempted.

Instruction is given by means of lectures on the strength of walls, theory of arches, properties and proportions of mortar, cement, etc.

Instruction will be given in making and using plans, and in every detail of the brick-layer's trade. Applicants must be between 18 and 23 years of age.

*Plastering* — Instruction is given in scratch coating, laying off, browning and hard finishing and in running and mitering small moldings and cornices.

The booths for plastering are formed of stud partitions, lathed in the usual manner and arranged to present the conditions of an ordinary room.

The use of hawk and trowel is first taught and the scratch-coat is then applied; this is afterwards taken off, and the walls are next covered by laying off, and practice obtained in the use of darby and rod; after this, practice is given on the hard and dry scratch-coat and this is followed by considerable practice in finishing with sand-mortar to prepare for hard finishing. Running and mitering simple cornices are taught last.

*Plumbing* — Instruction is both practical and theoretical; lectures being given every Wednesday evening.

The manual work includes the use of tools; preparing wiping cloths; making soil; tinning soldering iron, brass, iron, lead and tin; making solder; soldering seams; making cup-joint, over-cast joint, straight wiped-joint, flange joint and branch joint; working sheet lead into bends, traps, service boxes and safes; lining tanks, caulking iron pipe joints and bending with sand and kinking irons.



The lectures deal with the proper arrangement of drain, soil and waste pipes, trapping and ventilating the same, supply pipes, boilers, tanks, fixtures, pumps and also explain mistakes in plumbing.

*Stone-carving* — This course aims to give instruction in architectural stone-carving. Much attention is given, by drawing and modeling, to the application of the principles of ornamental design. Practice in free hand drawing and modeling, such as is given in the art department, is necessary for admission.

*Stone-cutting* — The instruction includes straight surface cutting, finishing in various ways, cutting chamfers, moldings and panels.

*House and fresco painting* — The Master Painters' Association of Brooklyn will cooperate in the direction of these classes and at the end of the term, examinations will be held and certificates granted with their approval.

The equipment will consist of partitions containing doors, windows and wainscoting for the house-painting class and booths plastered on sides and ceiling for the fresco workers.

The house-painting course includes practice in the preparation of surfaces, mixing paints, plain painting on wood, brick and tin surfaces, and later, hard wood polishing, flatting, polish white, gilding, lining, graining and paper-hanging.

Lectures will be given on the harmony of colors, mixing of colors, properties of oils and dryers and the various materials used in painting.

*Fresco painting* — Instruction will be given in preparing walls and ceilings for calcimine, in lining, laying out work, making and applying pounce and stencil and in putting on flat and shaded ornaments.

*Advanced fresco painting* — Applicants will be admitted only on approval of some member of the Master Painters' Association, or after giving satisfactory proof of proficiency in plain fresco painting.

Instruction will be given by alternate practice in drawing and coloring designs in the art department and in applying the same in fresco to the plastered wall.

#### SCIENCE AND TECHNOLOGY

*Geometry* — Instruction is given by lectures and recitations and deals with the properties of lines, angles and plane figures, as involved in plane geometry. Particular care is taken to bring out

the application of these principles to methods of drawing and construction.

*Chemistry* — Instruction is given, by lectures and practice in the laboratory, on the laws of chemical combination and the properties of the elements and compounds of inorganic chemistry. Special stress is laid on the application of chemistry in manufacturing processes.

*Electrical construction* — This course aims to give a knowledge of the principles of dynamic electricity and magnetism, and to trace the application of these principles to the methods and constructions of actual practice. Instruction is given by means of lectures and laboratory work. The lectures take up the analysis of the magnetic field and lines of force, magnetic circuit, properties of electric current, electro-magnets, induced electro-motive force, electrical units and work of currents and the application of these principles to the construction of primary and secondary batteries, telephones and telegraphs, dynamos, motors, transformers, measuring instruments, arc and incandescent lighting systems. The laboratory work deals with the verification of the laws of magnets and of induction, distribution of lines of force, winding armatures, practice in the use of measuring instruments, and in testing.

Classes in the following subjects will be formed when there is a sufficient demand.

*Applied mechanics* — Strength of materials and behavior under strain ; resistance to tension, compression, shearing and the theory of beams ; application of principles to building and machine construction.

*Machine design* — Analysis of mechanism, linkwork, gearing, belting, details of construction and theory of machines.

*Building construction* — Explanation of the different methods of construction in brick, stone, lead, iron, slaters', plasterers' and carpenters' work, their relative advantages and commercial value ; preparation of specifications.

*Metallurgy of iron and steel* — Properties of metals, ores, fuels ; blast furnace, puddling, Bessemer, open hearth and crucible process.

*Steam* — Theory of steam engine ; combustion ; transformation of energy ; laws of steam generation ; heat and work in the steam engine ; analysis of slide valve ; standard types of expansion

valves; indicator diagram; boilers; construction of safety valves, etc.

### Music department

The course of study comprises vocal music, theory of music, voice culture and the training of teachers. The classes are graded from the elements of music to the advanced stages. Pupils having no previous knowledge of music can by easy progress reach a high degree of musical ability. Grade examinations are held at the end of each term, and the certificates of the American Tonic Sol-fa Association and College of Music are granted to those who pass. In addition to the above, there are also a choral society and a select choir.

*Methods*—The Tonic Sol-fa system is chiefly used in the department as the means to a thorough knowledge of music; there are also classes for those who wish to apply their knowledge of music to the staff notation.

The normal training course is based on the practical experience of the Tonic Sol-fa College, London, probably the first college of music to recognize the necessity, and to undertake the thorough preparation of teachers of music.

*Vocal music*—The course consists of eight grades, as follows:

The first or preparatory grade is for beginners, for the study of the intervals of the major scale, mental effects of tones, sight reading in tune and time and the cultivation of the voice, ear and memory.

The second or elementary grade continues the subjects of the first grade, and introduces transitions to related keys, also part-singing and theory of music.

The third or intermediate grade includes more advanced work in the subjects of the second grade and more advanced changes of key, also minor scale and mode, theory of music and the elements of harmony and the musical form.

The fourth or matriculation grade continues the previous subjects and includes also ear exercises in harmony and rhythm, analysis of harmony and musical expression.

The fifth or advanced grade consists of a more advanced treatment of the subjects of the fourth grade and introduces musical composition in two, three and four parts, using the common chords and the discords of dominant 7th, super-tonic 7th, and dominant 4th, in their various positions.



The study of staff notation, elementary grade, is open to pupils who have passed the third grade as given above and who desire to apply the knowledge they have to the staff notation.

The staff notation, intermediate grade, consists of oral and written exercises, the former being equal in difficulty to the third grade; the latter comprise translations in full and short vocal score, in major and minor modes and examples of diatonic and chromatic intervals.

The staff notation, advanced grade, comprises oral and written exercises, the former corresponding in difficulty to the fourth grade above described; the latter include advanced exercises in notation, and a knowledge of figured basses.

*Theory of music* — This subject comprises musical and verbal expression, harmony, musical composition and counterpoint.

The course in expression includes musical and verbal phrasing; expression of melodic shapes, of the unexpected, of sequence, of related parts, of fugal imitations, of accompaniment; tone power and emotional class, classification, adaptation, etc.

The course in harmony comprises analysis of major and minor consonant chords, discords, chromatic concords and discords, cadence and sectional relation, transition to related and unrelated keys, sequences — tonal and real — two, three and four part harmony, in both modes.

In the course in musical composition is included part-writing as far as suspensions, discords of 7th, 9th, and augmented 5th; dominant 9th, 11th, and 13th; transitions to related and unrelated keys; modulations, etc., in both modes, and all the keys.

The course in counterpoint comprises writing in all five species, in two, three and four parts and with the species in combination, in both modes and all the keys.

*Voice culture* — This course is for elementary voice development and includes the proper methods of respiration, control of breath, correct tone production, vowel color, etc., and is useful both in song and speech.

*Normal course* — A two years' course of daily instruction in vocal music; theory of music; voice culture; vocal physiology; the art of teaching, with practice lessons; acoustics; history, and philosophy of music; the color music system. It is designed to prepare instructors and supervisors of music for public and private schools, musical societies, etc.



. Art of teaching — This course consists of a series of lecture-lessons in the art of teaching music, with individual practice in teaching, to prepare teachers of music for public schools. There will be afternoon and evening classes for those who are employed during the day.

Kindergarten color music — A series of lecture lessons on the color music system, intended to enable kindergartners to teach music successfully to the youngest children.

*Lecture course* — A course of lectures on interesting musical subjects is given during the season.

Classes in all the above subjects are held both day and evening. Day classes meet twice a week, evening classes once.

In the normal course, instruction is given daily.

## BUILDINGS

Main building, six story brick, built 1887, floor area 50,000 sq. ft., 30 class rooms. Mechanic arts building, five story brick, built 1887, floor area 40,000 sq. ft., 32 class rooms. Trade school, one story brick, built 1888, floor area 5,000 sq. ft., one class room.

## ADDITIONAL INFORMATION

All statistics are here given because not complete enough to be included in table 3.

### Calendar for past year

First term of 12 weeks began 24 S

Second " " 12 " " 2 Ja

Third " " 12 " " 2 Ap

Commencement held 19 Je

End of academic fiscal year 1 Jl

Weeks and days in session 36

" " " " long vacation 12-6

" " " " other vacations 2-4

Legal holidays 5

### Students

795 men

1,579 women

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2,374 total students, of which about 98 % were residents of New York state

## Library

Volumes bought in past year .....	5,107
Added by gift, exchange, etc. ....	235
Pamphlets added.....	?100
Total additions.....	?5,442
<hr/>	
Total volumes now owned.....	21,531
“ pamphlets “ “ .....	?500
<hr/>	
Serials bought in past year.....	161
“ given “ “ “ .....	4
<hr/>	
No. of hours open daily in term time, $12\frac{1}{2}$	
“ “ “ “ “ “ vacation, $12\frac{1}{2}$	
Not open on holidays or Sundays	
No. of readers at library between N 1889 and Je 1890, 24,009	
Volumes loaned for home use, 98,909	

NEW YORK COLLEGE FOR THE TRAIN-  
ING OF TEACHERS

9 University pl., New York

## HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month Year

12 Ja 1889 Regents chartered New York College for the Training  
of Teachers.

## TRUSTEES

Elected

1889 Chairman, Nathaniel A. Prentiss.....	120 Broadway
1889 Vice-Chairman, M. Dwight Collier.....	235 Madison av.
1889 Treasurer, Melbert B. Cary .....	35 E. 38 st.
1889 Secretary, William A. Potter.....	121 E. 23 st.
1889 Charles T. Barney .....	101 E. 38 st.
1889 William F. Bridge .....	309 Lexington av.
1889 Mrs Peter M. Bryson .....	26 E. 38 st.

## Elected

1889 Nicholas Murray Butler .....	9 University pl.
1889 Mrs Joseph H. Choate .....	50 W. 47 st.
1889 Arthur M. Dodge .....	72 E. 34 st.
1889 Grace H. Dodge .....	262 Madison av.
1889 David H. Greer, D. D .....	342 Madison av.
1889 John H. McIlvaine, D. D .....	37 E. 35 st.
1889 Spencer Trask .....	16 Broad st.
1889 George W. Vanderbilt .....	640 Fifth av.

## APPOINTED DURING YEAR

1889 Henry Villard .....	7 E. 72 st.
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## VACANCIES

George E. Clark, 51 Wall st., resigned N 1889

Charles E. Merrill, 739 Broadway, resigned N 1889

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. College for the Training of Teachers.

1889 President, Nicholas Murray Butler, B. A., Ph. D. 9 University pl.

B. A. Columbia 1882, M. A. 1883; Ph. D. University of Berlin 1884; Sorbonne and Collège de France 1885; Fellow in philosophy, Columbia 1882-5, Assistant in philosophy 1885-8, Professor of philosophy, ethics and psychology 1888; Dean University faculty of philosophy, Columbia 1890; President Industrial Education Association 1887-9; Trustee New Jersey State Normal School; Member State Board of Education 1888; President New Jersey Council of Education 1889.

1889 Dean and Secretary, Walter Lowrie Hervey, M. A. 172 W. 10 st.

B. A. Princeton 1886, M. A. 1889; Instructor in Latin, Granville Female College 1882-4; Instructor in Latin and Greek, Duane S. Everson's Collegiate School 1886-7; Instructor in Latin and Greek, Brooklyn Latin School 1887-9.

Treasurer, Milbert B. Cary, 35 E. 38 st.

1889 Clerk to the Treasurer, Abram Wyckoff, 47 Fulton st., Newark.

1889 Lady Principal, Mrs Charlotte Louisa Williams, 9 University place.

1890 Librarian, Lilian Denio, 9 University pl.

Graduate Columbia College School of Library Economy 1888;  
Special student at Wellesley College.

1889 Registrar, Harriette Amelia Keyser, 252 W. 99 st.

Author On the borderland, Thorns in your sides.

1889 Stenographer, Jane Ellis Ryan, 14 Livingston pl.

1889 Messenger, Katherine Lawler, 9 University pl.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. College for the Training of Teachers and years spent in teaching.

1889 Nicholas Murray Butler, Ph. D. President, 9 University pl.  
11 See also "Administration."

1889 Walter Lowrie Hervey, M. A. Dean and Professor of the  
9 History and Institutes of Education, 27 W. 10 st.  
See also "Administration."

1889 Hannah Johnson Carter. Professor of Form Study and  
7 Drawing, 9 University pl.

Director, Kingston Art School, Kingston, Canada, one year;  
Assistant in editorial department and supervisor of drawing,  
Prang Educational co., Boston, two years; President Art  
Department, National Educational Association.

1889 Angeline Brooks. Professor of Kindergarten Methods and  
18 Director of the Kindergarten, 9 University pl.

Teacher, West Springfield Massachusetts 1872-8, Valley Falls,  
Rhode Island 1878-9, Philadelphia 1879-81, Springfield 1881-3,  
New Haven 1884-7, New York 1887.

1889 John Francis Woodhull, B. A. Professor of Natural Science,  
10 Montclair, New Jersey.

B. A. Yale 1880; Vice-principal High school, Bloomfield, New  
Jersey 1880-2; Principal High school, Chicopee, Massachusetts  
1882-5; Teacher of natural science, New Paltz, New York State  
Normal School 1886-8; Professor of natural science, New York  
College for the Training of Teachers 1888-; Author Manual  
of homemade apparatus, Simple experiments for the school  
room.

1889 Mrs Charlotte Louisa Williams. Principal, 9 University pl.  
4 See also "Administration."



- 1889 Theodore Frelinghuysen Seward. Professor of Vocal Music,  
35 East Orange, New Jersey.

Member of Tonic Sol-fa College of London; Editor New York musical pioneer, 1865-6, New York musical gazette, 1867-70, Tonic sol-fa advocate, 1881-5, Musical reform, 1886-8, Universal song, 1889; Author Temple choir, The singer, Sunnyside glee book, Glee circle, Tonic sol-fa music reader, Tonic sol-fa school course, Choral school, Pestalozzian music teacher, Universal providence, or life as a school.

- 1890 Sarah D. Jenkins. Professor of Methods of Teaching, 9  
18 University pl.

Instructor, Boston Normal School 1869-74, Brooklyn Polytechnic Institute 1877-85; Professor of methods of teaching, State Normal School, Nebraska 1885-90.

- 1890 Charles William Eaton. Professor of Mechanic Arts, 9  
7 University pl.

Instructor of mechanical drawing, Massachusetts Institute of Technology 1884-90; Principal of Evening Drawing School, Haverhill, Massachusetts 1885-8.

- 1890 E. H. Cook, M. A., Ph. D. Lecturer on the Relations of the  
25 Teacher to the Community and to the State, New Brunswick, N. J.

B. A. Bowdoin 1866, M. A. 1869; Ph. D. St Lawrence University, Colgate 1889; Teacher, Wilton Academy, Maine 1867-8, Woodstock Academy 1869-71, West Chester State Normal School 1871-2, Columbus High and Normal School 1873-81, State Normal School, Potsdam 1884-9; Member American Academy of Political and Social Science; Secretary National Educational Association; President New Jersey State Teachers' Association; Associate editor Educational review.

Andrew J. Rickoff, Ph. D. Lecturer on School Organization and Management, 40 W. 59 st.

- 1890 Helen Kinne. Instructor in Domestic Economy, 9 Univer-  
1 sity pl.

- 1889 James Schuyler Bloomer. Instructor in Wood Working,  
3 408 Pulaski st., Brooklyn.

- 1889 Frank Edson Hale. Instructor in Wood Working, 89  
3 Seventh av.

1889 Rustan Lindhe. Instructor in Slöjd Woodcarving and Gymnastics, 3 Livingston pl.

University of Upala, Sweden 1887; C. E. Chalmers Technical Institute, Sweden 1882; Civil engineer, Royal Engineering Corps, Sweden 1884-8; Member Chalmers Technical Society, Gothenberg, Sweden.

1890 Caroline Hilliard, B. A. Instructor in Natural Science, 9  
7 University pl.

B. A. Smith College 1883; Teacher, High School, Westboro, Massachusetts 1883-4; Teacher of Latin and science, Bromfield Academy, Harvard, Massachusetts 1884-5; Latin and science, private schools, New York city 1886-9

Belle Elliott Morris. Instructor in Physical Training, 1652  
Madison av.

1889 Edith Palmer. Assistant in Form Study and Drawing, 9  
4 University pl.

Member Art Students League, 1882-5.

1889 Emma Jane Fowler. Assistant in Domestic Economy, 116  
2 W. 17 st.

Graduate of New York College for the Training of Teachers.

Mary Lester Bickford. Assistant in the Kindergarten, 9  
University pl.

Flora E. Mann. Assistant in the Kindergarten.

1890 Mary Adelaide Edwards, B. A. Instructor in the High  
2 School.

B. A. Wellesley 1889.

1890 Ella Cornelia Williams, M. A. Instructor in the High  
9 School, 9 University pl.

Work for B. A. completed 1879; M. A. University of Michigan 1880; Teacher of mathematics and physics, Rockford Seminary, Illinois 1880-2; Fellow in mathematics, Byrn Mawr College 1884-5; Teacher of mathematics and science, New Hampshire State Normal School 1886-8; Teacher, High School, Arlington, Massachusetts 1889-90.

1889 Grace Witbeck. Instructor in Model School, 139 E. 18 st.  
Educated at Oswego Normal School.

1889 Amy Schussler. Instructor in Model School, 210 Third av.  
2

1890 Alice Cynthia King. Instructor in Model School, 9 University pl.

Graduate of Oneonta Normal School 1890.

#### VACANCIES

A. M. Chase, B. S. Resigned Je 1890.

A. L. Fairfield. Resigned Ap 1890.

J. H. Oakley. Resigned My 1890.

#### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

#### REQUIREMENTS FOR ADMISSION

See table 3.

#### COURSES OF STUDY

The course of study includes psychology, the history and science of education, methods of teaching, observation and practice in the model school, school organization and administration in the United States, England, France and Germany, the theory and practice of the kindergarten, natural science including the construction of simple illustrative apparatus, history, and the subjects included under the term manual training. Special attention is given, under the latter head, to form-study and drawing, domestic economy, mechanical drawing and wood-working.

Male students are not required to attend any of the courses in domestic economy, although the lectures in that department are open to them, should they choose to attend. The course in wood-working is designed primarily for male students, but it is open to female students should they desire to attend it. The practical work of the course is not an undue tax on their physical powers.

*Post-graduate courses* — For teachers of high scholarship and experience who desire to spend a year in New York in the pursuit of advanced courses in pedagogics, special facilities are provided. In addition to the privilege of electing any of the regular courses of instruction, such students may, under the direction of the faculty, study special topics in psychology and the science of education, specific periods in the history of education, methods of advanced instruction in history, literature, science and the languages, the systematic study of children, representative edu-



educational institutions and systems, the organization and superintendence either of special departments or of general school work.

*Saturday classes for teachers* — For persons actually engaged in the work of teaching, but who wish to pursue further courses of professional study in order to enable them to meet satisfactorily the demands made upon them by the continual expansion and elevation of the curriculum, Saturday classes are organized in the several departments of the college.

Further information concerning these Saturday classes may be obtained by addressing the dean.

## DEPARTMENTS OF INSTRUCTION

### History and institutes of education

This department includes psychology and logic, the science of education and the history of education. In psychology and logic the object is by lectures and the use of such works as those of Murray, Harris and Sully, supplemented by observation on the part of the students, to give a correct and full analysis of mental life and development, the laws which govern it and the various processes involved in the development of knowledge, feeling and the will. Continual application of the principles and facts discussed is made to the practical work of the school-room. In the science of education the students use as guides Rosenkranz's Science of education, Joseph Payne's Lectures on the science and art of education, and Radestock's Habit in education. The course begins with a discussion of the fundamental principles of education and includes the citation and study of standard and educational writers. The course in the history of education is designed to trace the development of educational institutions, organizations and methods from the earliest times to the present. It includes with a survey and comparison of contemporary educational systems in Europe and in this country.

### Methods of teaching

The work of this department is closely related to that of the preceding, depending as it must for its processes and explanation upon the science of education. The purpose of the course in methods of teaching is not only to make teachers familiar with the most approved methods of instruction, but also to inform them concerning the scientific and psychological basis of such methods. The result should be to place beyond doubt the fact that correct



methods are founded on definite knowledge of the laws of mental action. Such methods, therefore, as are based upon psychological truth are studied in their applications in teaching the usual English branches.

In the several branches of study the subjects are analyzed into topics, and their dependence, relative values and logical arrangement determined. They are then discussed with reference to why and how they should be taught, the pedagogic principles involved being carefully considered and explained.

The unity of the several branches of study from the kindergarten to the highest department is constantly borne in mind, to illustrate economy in expenditure of time as well as in the energy of pupil and teacher. In the primary work the time, place and manner of introducing symbols and their relations to the true objects of thought are made special subjects of study. Observation and practice accompany all theoretical instruction, ample facilities for both being afforded under the direction and supervision of the professor of methods of teaching.

School organization in its several phases of gradation, classification and discipline, together with the outlining of courses of study and the preparation of programs, forms an important part of the professional preparation and is carefully studied in connection with the work of the course.

### School organization and discipline

The instruction given in this department is of a thoroughly practical character and includes the careful study and inspection of state, county and city educational systems and institutions. The lectures are designed to develop the principles on which school organization and discipline should rest and to instruct the teacher concerning his relations to the community and to the state.

### The kindergarten

*General course*—All students who are candidates for a degree or who enroll themselves in the regular course are required to take the general kindergarten course. It occupies three periods a week during the junior year.

In this course an outline of the kindergarten system and its philosophy is given by means of lectures, and opportunity for observation and practice with children in the kindergarten will be

afforded, sufficient to show how the theory is carried into practice.

The object of this course is not to prepare students for special kindergarten work, but to give them such insight into Fröbel's philosophy as will enable them to appreciate the work done in the kindergarten and to see its relation to all the later education of the child.

*Elementary course*—The elementary course occupies one year and is complete in itself. It takes up as fully as the time permits, all the subjects included in the advanced course, and to those who finish it satisfactorily a certificate will be given testifying to that fact.

This course will include, besides daily observation and practice in the kindergarten, four lectures weekly. The subjects taken up will be the theory of Fröbel's system, the Mother play and nursery-songs, the gifts and occupations, elementary crystallography, clay-modeling, color, elementary botany, story-telling and vocal music, including the adaptation of the Tonic sol-fa system to the kindergarten. A brief course in form-study and drawing as taken up in the primary schools will be given by the professor of form-study and drawing. Students taking the special kindergarten courses are required to attend the lectures on psychology which are given by the professor of the history and institutes of education and also the three exercises weekly in physical training.

*Advanced course*—A second year's course is provided for those who wish to enter upon practical kindergarten work with the best possible equipment, as well as for kindergartners of some practical experience who wish to prepare themselves to meet the increasing demands for kindergartners who can combine with ability and experience a true insight into the philosophy of the kindergarten and its relation to the general work of the school. In this course the subjects taken up during the first year will be more fully developed and their bearings upon child-culture in the home and the school as well as in the kindergarten itself, will be more thoroughly and practically illustrated. Students taking the advanced kindergarten course will also be required to attend the lectures on the science of education given to the senior class by the professor of the history and institutes of education. The college certificate is given to those who complete this course with distinction.

## History

The plan followed is that of personal investigation in connection with lectures upon topics which have a general bearing upon the development of civilization.

## Physical culture

The aim of this work is, first, to secure for the students themselves the best health, strength and endurance possible, to place physical development before them in the place it should occupy. Secondly, to instruct them in such exercises as may be used to advantage in schools, in the relation of physical habits to mental and moral growth, and to lead them to an understanding of gesture as a natural mode of expression and a guide to a better understanding of the child's mind.

On entering the college each student is tested as to general strength and endurance, and special work will be arranged to meet the needs of the individual. Students should enter with gymnastic suits suitable for the work, or be prepared to purchase them.

## Natural science

The object of the work is to prepare the student to give experimental lessons in elementary science to pupils in primary and grammar grades. The topics dealt with are such phenomena as daily come under the observation of children and such as they naturally desire to inquire into. A course of experiments is pursued which is calculated to develop the explanation of such simple phenomena, and the students are taught to construct and adapt their own illustrative apparatus.

The members of the class, before coming up for their diploma, are required to fit themselves in the subject-matter relative to these topics by reading prescribed portions of books of reference. No examination in science is required for admission to the college. It is found to be better that students should do their reading in connection with their experimental work. All candidates for a diploma, however, must pass this examination in subject-matter at the end of their course.

## POST GRADUATE COURSE IN SCIENCE

Graduates of colleges and scientific schools and those who are prepared to pass satisfactory examinations in zoology, physiology,



botany, physics and chemistry may enter the post graduate course of one year.

The course will deal with methods of teaching (1) the physical sciences and (2) the biological sciences. The work will be of three kinds: (a) Laboratory instruction in the art of experimenting and the method of using experiments in teaching; (b) Observation of lessons given by a professional teacher in the high school department of the model school; (c) Practice teaching in high school classes. Much attention is paid to simplifying the modes of illustrating the subject-matter, and instruction in the use of homemade apparatus will be a leading characteristic of the whole course.

Those who complete this course successfully are entitled to the departmental certificate. Those who take in addition the course in psychology and science of education are entitled to receive the college certificate.

### Domestic economy

The instruction in this department includes cooking and sewing. The primary objects of the cooking course are to stimulate investigation, to develop the power of accurate observation, and to lead the pupils to put to practical use in the preparation of food their knowledge of the natural sciences. Throughout the entire course the students are instructed in the chemistry of cooking and food nutrition, by means of lectures illustrated by charts and a food museum. There is also a prescribed course of reading, and lectures on domestic economy, including all matters relating to the care and hygiene of the household. There are no demonstration lessons, the work in the cooking laboratory being entirely practical. The course of study includes 10 lessons on each of the following subjects: the principles of cooking with practical illustrations, plain cooking, preparation of fancy dishes, cooking for the sick, and a course of lessons intended to teach the most economical method of choosing and preparing food. This course occupies four periods a week during the senior year.

The sewing system used in the college aims to give a thorough training in plain hand sewing, to cultivate precision, and, through the medium of object lessons, to impart a knowledge of textile fabrics and their manufacture, and other articles used in sewing.

The system embraces a primary course, which is designed for pupils in the primary grades, and follows as closely as possible



the sewing, cutting and weaving of the kindergarten. The work of the grammar grades takes the pupils through all the stitches used in plain hand work, mending, and the cutting of simple garments. The high school work takes up useful household embroidery and finishes with a course of lectures on textile fabrics. Throughout the whole course small pieces of material are used for the patches.

This course occupies three periods a week during the junior year.

Special courses are offered by this department to teachers, nurses or special students. Private classes and extra courses may also be arranged for by making application to the professor of domestic economy.

### Form study and drawing

*Junior year* — Study of geometric models and type forms; detailed method of presentation to very young children; making in clay and paper; use of tablets and sticks; arrangement of simple designs; cutting the same in colored paper and drawing; suggestions for the work of each day; arrangement and length of lessons; general primary work.

Construction: working drawings; free hand and instrumental; paper models, and objects based on such models; use of simple problems in constructive geometry.

Representation: free hand drawing from models singly and in groups; rules of composition; arrangement and drawing of groups of natural objects; principles involved in illustrative drawing on the blackboard.

Decoration: historic ornament; modeling of natural forms and ornament in clay; decorative design in pencil outline and with combinations of colored papers; original designs about a center, and over a surface; drawing done wholly by the pupil and subject to thorough criticism.

Theory of color; its application in the school-room; relief in clay; instruction in methods of teaching free hand drawing; the history of ornament.

*Senior year* — Work adapted to the high school grades; relief in clay; historic ornament in water color; light and shade; original design. Students desiring to become special teachers of form study and drawing should be able, in entering the college, to pass an examination in free hand drawing and light and shade.

### Mechanic arts

This department includes at present mechanical drawing, the Swedish system of Slöjd, wood-working, and metal-working such as is suitable for pupils of high school age.

Mechanical drawing occupies four periods a week during the junior year. The instruction aims to give the student a thorough knowledge of orthographic projections and working drawings. The drawings executed are afterwards used as the basis of constructive work in wood.

This course occupies two periods a week during the junior year.

Wood-working is arranged to afford instruction and exercise in constructive work to pupils of the upper grammar and high school grades. The course occupies two periods a week during the senior year.

All of these courses are designed for pupils of either sex and involve no undue strain on their physical powers.

No attempt is made to teach the trades. Whatever tools are used, are employed for the sake of the educational value of the processes which they involve.

### POST GRADUATE COURSE

The equipment is now completed for such advanced courses as will train those who wish to qualify themselves specially to teach the mechanic arts. These include advanced mechanical drawing and machine designing, wood-turning, pattern making, molding, casting, forging, vise work, metal turning and planing. It requires the student's entire time for one year. Opportunity is afforded to visit other schools and shops for the purpose of inspecting the methods of instruction and work that are adopted. Upon the satisfactory completion of this course a certificate testifying to that fact will be granted, signed by the president of the college and the professor of mechanic arts.

### Vocal music

This course at present occupies two periods a week throughout the junior year. The instruction is based on the Tonic sol-fa method and is intended to equip the student to teach music rationally and as part of the regular class-room work. Special classes are formed when desired.

## SYNOPSIS OF STUDIES

Hours per week	JUNIOR CLASS	Hours per week	SENIOR CLASS
3	Psychology and logic	3	History of education
2	Science of education	2	Science of education
2	Methods of teaching	3	Methods of teaching
3	Theory and practice of kindergarten	2	General history
3	Physical culture	3	Physical culture
6	Natural science	4	Domestic economy
4	Form-study and drawing	4	Form-study and drawing
4	Mechanical drawing	2	Woodworking
3	Domestic economy	5	Practice teaching
2	Slöjd		
2	Vocal music		

## REQUIREMENTS FOR GRADUATION

The degree of bachelor of pedagogy is conferred on such students, being already graduates of colleges or possessing equal attainments, who shall have completed the regular course of two years.

The college diploma is conferred on all other students who complete the regular course.

## BUILDINGS

Two buildings, value \$125,000, are leased, the rent of which is \$7,500 per annum.

## ADDITIONAL INFORMATION

The institution is a professional and not strictly a normal school, as no secondary branches are taught. It aims to equip students thoroughly for the profession of teaching.

# UNIVERSITY OF THE CITY OF NEW YORK

## SCHOOL OF PEDAGOGY

*Washington sq., New York*

For historic sketch, trustees, administration and instruction, see University of the City of New York, pp. 646 – 651.

### HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships, fellowships or requirements for admission reported.

### COURSES OF STUDY

During the year 1890–91, the work in pedagogy will be divided into five divisions, as follows :

- 1 History of educational thought
- 2 Methodology
- 3 Science of education and psychology
- 4 School systems, school law, and a discussion of an ideal school system
- 5 Critical study of classic educational authors

The arrangement of classes, time of lectures and plans of work, will be announced at the opening lecture.

#### HISTORY OF EDUCATIONAL THOUGHT

This division will include (1) Ancient, medieval and later history. (2) Special organizations, as the Bell-Lancaster, kindergarten, graded, etc. (3) The school systems of the leading nations of Europe, as well as our own, including a study of the relations of education to the state ; also a critical examination of national, state, county, city and district organizations.

#### SCIENCE OF EDUCATION

This division will include (1) The admitted principles of education. (2) The laws of human thought, and of the mental growth of the child, with special reference to influence, motive, habit, character, etc. (3) Ethics and religion as related to pedagogics.



METHODOLOGY

Under this head will be studied (1) The application, the accepted principles of political and social economy in rules governing school systems, laws, regulations, programs, and disciplines in all kinds of schools. (2) General principles drawn from psychology and the course of nature, under all teaching. (3) Special principles applicable to each of the subjects taught in our schools. (4) The principles underlying the laws promoting school health. (5) Original investigations concerning methods, processes, and devices of school work. In addition, in this department, will be required a critical study of 12 standard classic text books upon education.

REQUIREMENTS FOR GRADUATION

The degrees of master of pedagogy and doctor of pedagogy are conferred on those students who attend the required lectures, pass the required examinations, present certificates showing the required number of years' successful experience in school-room work, and pay the required fees.

BUILDINGS

See University of the City of New York, Department of Arts and Sciences, p. 666.

NEW YORK STATE NORMAL COLLEGE

*Willett st., Albany*

HISTORIC SKETCH

For list of date abbreviations see p. 254.

Month	Year	
7 My	1844	Legislature established a normal school at Albany.
18 D	"	Normal school first opened.
13 Mr	1890	Regents chartered New York State Normal College.

TRUSTEES

President, Hon. Andrew S. Draper .....	Albany
Treasurer and Secretary, Samuel B. Ward, M. D., Ph. D. .	"
Frederick Harris, M. A .....	"
Marcus T. Hun, M. A .....	"
Robert C. Pruyn, M. A .....	"

## ADMINISTRATION

Figures in column at left give first year of service in N. Y. State Normal College.

1890 President, William J. Milne, Ph. D., LL. D.

B. A. University of Rochester 1868, M. A. 1871, Ph. D. 1876;  
LL. D. De Pauw University 1877; Preceptor, Brockport Col-  
legiate Institute 1863-5; Professor of ancient languages,  
Rochester Collegiate Institute 1865-7; Professor of ancient  
languages, Brockport Normal School 1867-71; Principal State  
Normal School, Geneseo 1871-89.

1889 Treasurer, Samuel B. Ward, M. D., Ph. D.

See also Albany Medical College.

1887 Secretary, Edith Bodley, 160 Elm st.

13 Graduate New York State Normal School 1886; Teacher,  
New York State Normal School 1886; Intermediate depart-  
ment, Rondout, New York, 1886-7.

## INSTRUCTION

Figures in column at left give first year of service in N. Y. State Normal College and  
years spent in teaching.

1890 William J. Milne, Ph. D., LL. D. President and Professor  
27 of Philosophy of Education and School Economy.

See also "Administration."

1855 Albert N. Husted, M. A. Professor of Mathematics, 314  
36 Hamilton st.

M. A. Hamilton 1866.

1869 William V. Jones, M. A. Professor of Mathematics and  
23 Book-keeping.

Graduate New York State Normal School; M. A. Washington  
and Jefferson College 1869; Principal Public School, Kings-  
ton, New York, 1868-9.

1890 Edward A. Burt. Professor of Natural Sciences, 113  
12 Lake av.

Graduate New York State Normal School, 1881; Teacher of  
English and science, Albany Academy 1880-5; Member New  
York State Teachers' Association and of American Society of  
Microscopists.

1887 Samuel B. Belding. Professor of Vocal Music, 15 Myrtle av.

- 1866 Kate Stoneman. Teacher of Geography, Drawing and Pen-  
26 manship.

Attorney and Counselor at law 1886; Member National Federation of Women's Clubs; Author Stoneman's System of penmanship.

- 1869 Mary A. McClelland. Teacher of General History, Literary  
23 Criticism and History of Education, 136 State st.

Graduate New York State Normal School 1868; Principal Graded School, Shelter Island, New York 1869; Vice-president General Federation of Women's Clubs.

- 1875 Anna A. Farrand. Teacher of Mathematics.  
22

- 1870 Mary F. Hyde. Teacher of Composition, 168 Western av.

20 Teacher of mathematics and rhetoric, New York State Normal School 1870-82; Principal Yonkers Public School 1882-4; Author, Practical lessons in the use of English.

- 1887 Mrs Margaret Sullivan Mooney. Teacher of Elocution and  
24 English Literature, 58 Myrtle av.

Albany High School 1873-81; Member New York State Teachers' Association.

- 1886 Anna E. Pierce. Critic Teacher, 39 Elberon pl.

7 Graduate New York State Normal School 1884; Preceptress, Lisle Academy 1885-6.

- 1889 E. Helen Hannahs. Teacher of the Natural Sciences and  
7 French, 14 Jay st.

Graduate New York State Normal School 1884; Teacher Academic department Waterville Union School 1885-7, Rome Free Academy 1887-9.

Edith Bodley. Substitute.

See also "Administration."

- 1878 Mrs Meriba A. B. Kelley. Superintendent of Model School,  
28 23 S. Knox st.

Principal Gloversville High School 1870-8.

- 1885 Ida M. Isdell. Superintendent of Kindergarten, 885  
6 Madison av.

- 1887 Helen L. Sewell. Assistant in Kindergarten, 25 Robin st.

1890 Mrs Sara F. Bliss. Teacher of Methods, 158 Elm st.

25

Teacher of methods, State Normal School, Geneseo, New York 1871-84; Principal Training School, Saratoga Springs 1884-6; Lady principal, Purdue University, Lafayette, Indiana 1886-7; Principal High School, Long Island City 1889-90.

## HONORARY DEGREES, ETC.

No honorary degrees, college appointments, prizes, scholarships or fellowships reported.

## REQUIREMENTS FOR ADMISSION

### ENGLISH COURSE

Candidates for admission to this course must be at least 17 years of age, and greater maturity is desirable.

They must pass satisfactory examinations on the following subjects: arithmetic, algebra through quadratics, geometry, plane trigonometry, grammar, rhetoric, English literature, geography, American history, general history, botany, physiology, zoology, physics, chemistry, astronomy, geology, book-keeping, civil government and elements of linear drawing.

The examinations may be taken at the beginning of any term, and they may be distributed through two years.

Those who present the following evidences of proficiency will be admitted without examination, viz.: state certificates, diplomas from colleges, universities, the regents, normal schools, high schools, academies and academic departments of union schools, provided they cover the subjects prescribed for examination in the preceding paragraph.

Regents' pass cards and certificates of standing from principals of union schools, academies, high schools and other higher institutions will be accepted in lieu of examinations for the ground covered by them, except for arithmetic, grammar and geography.

A knowledge of Latin may be substituted for plane trigonometry or other advanced subjects.

### CLASSICAL COURSE

Candidates for admission to this course must be at least 17 years of age, but no one will be graduated from the course who is not at least 20 years of age.



They must pass satisfactory examinations on all the subjects required for entrance to the English course and in addition thereto *Cæsar*, three books, *Cicero*, six orations, *Virgil's Æneid*, six books, Latin prose composition, *Xenophon's Anabasis*, three books, *Homer's Iliad*, three books, and Greek prose composition.

Instead of the requirements in Greek the candidates may offer a two years' course in French or German or a less amount of both.

If the student has not read the passages prescribed, an equivalent amount of other authors will be accepted.

The examinations may be taken at the beginning of any term and they may be distributed through two years.

Those who present the following evidences of proficiency will be admitted without examination, viz.: diplomas from colleges, universities, the regents, normal schools, high schools, academies, and academic departments of union schools, provided they cover the subjects prescribed for examination in the preceding paragraph.

Regents' pass cards and certificates of standing from principals of union schools, academies, high schools and other higher institutions will be accepted in lieu of examinations, for the ground covered by them except for arithmetic, grammar and geography.

#### COURSE FOR KINDERGARTNERS

Applicants must be at least 18 years of age. They must be graduates from some high school, academy, academic department of a union school, or other higher institution of learning, that they may be mentally fitted to comprehend and apply understandingly the truths underlying the Fröbel system. They should have a natural love for children that they may enter into childish joys and sorrows in a sympathizing manner. They should have the consciousness of a high moral purpose and a love for nature; good health, perseverance, and a cheerful and contented disposition. They should be able to play the piano, and have a true ear and voice for singing.

#### PROVISIONAL COURSE

Candidates must be at least 16 years of age, possess good health, good moral character and average abilities.

Those who desire to enter this course in September 1890, must pass satisfactory examinations on arithmetic, grammar, geography, physiology, spelling and algebra through simple equations. They

must also be able to pronounce accurately and readily words in common use and to write neatly and legibly.

Holders of diplomas from high schools, academies and academic departments of union schools, from the regents and other higher institutions of learning will be admitted to this course without examination and proper allowance will be made for the subjects covered by the diplomas.

Holders of first and second grade teachers' certificates granted under the uniform examinations will be admitted without examination provided they have pursued algebra through simple equations.

Regents' pass cards and certificates of scholarship from teachers of secondary schools will be received as evidence of proficiency in the work covered by them except in arithmetic, grammar and geography.

Those who present themselves for admission in February 1891, must give evidence of proficiency in algebra through quadratics, three books of geometry, elements of natural philosophy, and American history in addition to the requirements specified for September 1890, because the studies specified in the first term of this course will not be taught in the school after January 1891.

Holders of first grade certificates, diplomas from high schools, academies, academic departments of union schools, from the regents and other higher institutions of learning, will be admitted in February 1891, without examination.

Students who have attended the Normal School can complete the course as it was when they entered, provided they are able to do the work in the classes which are formed at the time when they wish to resume their studies in the college. It should be remembered, however, that those who would resume their work in September 1890, must have passed the examinations of the junior class, first term, and that those who do not enter till February 1891, must be able to enter the senior class, first term, as prescribed in the course of study which they began.

## COURSES OF STUDY

The courses of study are the English course, classical course, course for kindergartners and provisional course. The latter is a course which is offered during the period of transition from the present condition to a professional institution.

## ENGLISH COURSE

## FIRST TERM

Philosophy of education  
School economy

Drawing

Methods of teaching — Number, arithmetic, botany, place, geography, physiology, color, language, grammar, zoology, object lessons, reading, penmanship, composition

A course of reading connected with professional work

## SECOND TERM

History of education

School law

Kindergarten methods

Methods of teaching — Music, drawing, physical culture, elocution

Teaching in model school

A course of reading connected with professional work

Discussion of educational themes

## CLASSICAL COURSE

## SECOND TERM

Methods of teaching — Algebra, geometry, physics, chemistry, Latin, rhetoric, mineralogy and geology, astronomy

Preparation of specimens and apparatus

## THIRD TERM

Methods of teaching — Latin, Greek or French or German, history, physical geography, solid geometry and mensuration, civil government, trigonometry, book-keeping, sanitary science, school architecture

Preparation of specimens and apparatus

<sup>1</sup> The first and fourth terms are identical with the first and second terms of the English course.

## 1 PROVISIONAL COURSE

FIRST TERM	SECOND TERM	THIRD TERM
Arithmetic	Geometry	Trigonometry
Geometry	Astronomy	English literature
Grammar	Rhetoric	Political economy
Physics	Composition	Book-keeping
Elocution	General history	Civil government
American history	Literary criticism	Drawing
Algebra	Physics	Botany
		Zoology
		Chemistry
		Geology

## COURSE FOR KINDERGARTNERS

This will include lessons on the use of the following articles and occupations in developing the child's mind: Ball, sphere, cube and cylinder, blocks, tablets, slats, sticks, rings, and peas work; Pricking, sewing, drawing, lacing, weaving, paper cutting and paper folding.

Systematic instruction will be given on the principles and philosophy of training which underlie the kindergarten system. Lessons on the care of children and on story-telling will also occupy the attention of the students during a part of the course.

Instruction in the Holt system of music will be given, so that the kindergartners may be able to teach the rudiments of vocal music to children.

Lessons in physical culture and kindergarten music and games will form a part of the course.

Lessons in botany and natural history will be given, with methods of presenting them to little children.

Instruction in free hand drawing and in modeling will be given during the year.

Students will be required to prepare pattern books of weaving, sewing, pricking, paper-folding and paper-cutting, and they will be expected to invent new forms for themselves in accordance with the principles underlying all the work.

<sup>1</sup>The fourth and fifth terms are identical with the first and second terms of the English course.



Students will be required to observe for a time the work done in the kindergarten from 9 to 12. They will afterwards write out their observations and submit them to the class for approval and criticism. As soon as the students are qualified to enter upon the work of instruction, they will be given practical work with the children.

A course in reading will be prescribed, including such books as *Autobiography of Fröbel*, *Reminiscences of Fröbel*, *Education of man, Émile, Leonard and Gertrude*, *Sully's Handbook of psychology*, and other works on educational themes. Frequent essays on the various phases of the instruction and training of children, and abstracts of the books read will be required.

### REQUIREMENTS FOR GRADUATION

When the English, provisional or kindergarten course is satisfactorily completed, diplomas are conferred. The degree of bachelor of pedagogy is conferred at the close of the classical course.

### BUILDINGS

Main building, three story brick and stone, built 1885, 38 class rooms, 800 seats (in chapel), floor area 63,440 sq. ft., value \$142,461.

# TABLE 1

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## DEGREE-CONFERRING INSTITUTIONS

### REPORTING

Statistics for two or more collegiate departments under one government

### SUMMARY OF STATISTICS

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#### EXPLANATORY NOTES

1 These facts are digested from the sworn reports of the institutions, but in a very few cases where specified items were not given they have been supplied from the most reliable sources available; e. g., the printed documents or previous manuscript reports of the institutions.

2 No blank spaces appear in any of the columns of statistics in the tables of this report, but where exact figures could not be given one of the following characters has been used:

A, means fact included in figures reported under this head by the school of arts of this institution.

...., means "does not exist in this institution," or that the heading of the column "does not apply."

O, means "none this year."

?, means "fact unknown."

? preceding an answer means "probably" or "approximately;" e. g., ? 324 means "to the best of our knowledge and belief about 324."

3 Sometimes in these tables the columns marked "total" do not give the exact sum of the several items. In case of values this is due to the fact that cents are not considered in computation. In the case of other statistics, institutions often give a definite total, though certain of the items are doubtful.

4 In any case where a ? appears in a column the total for that column should be understood not as absolutely correct, but as approximate.

5 For list of date abbreviations see p. 254.

TABLE

DEGREE-CONFERRING INSTITUTIONS REPORTING STATISTICS FOR TWO OR MORE

No.	NAME	<i>e</i> Officers of administration and clerical assistants	Officers of instruction	Endowed professors	Total students in regular courses for degrees
		<i>f</i> 2	3	4	5
Columbia... 1	Columbia College 1				
	School of Arts .....	37	47	1	277
	School of Law .....	4	6		456
	College of Physicians and Surgeons .....	6	88		619
	School of Mines .....	3	59		231
	School of Political Science .....	1	10		98
	Total .....	51	210	1	1,681
Union..... 2	Union University <i>a</i>				
	Union College .....	8	17		124
	Albany Law School .....	3	10		50
	Albany Medical College .....	3	37	1	148
	Albany College of Pharmacy .....	5	3		53
	Total .....	19	67	1	375
U. C. N. Y.. 3	University of the City of New York <i>b</i>				
	Department of Arts and Science .....	7	32	2	125
	Department of Law .....	2	9		142
	Department of Medicine .....	5	63		616
	Union Theological Seminary .....	4	13	7	158
	Total .....	18	117	9	1,041
Niagara..... 4	Niagara University <i>c</i>				
	Collegiate Department .....	5	9	7	46
	Buffalo Law School .....	4	23		26
	Medical Department .....	3	23	7	40
	Total .....	12	55	7	112
St. Lawrence..... 5	St. Lawrence University				
	College of Letters and Science .....	5	7	5	65
	Canton Theological Seminary .....	3	3	4	22
	Total .....	8	10	9	87
Cornell..... 6	Cornell University <i>d</i>				
	School of Arts and Science .....	27	122	2	947
	School of Law .....	3	13	7	96
	Total .....	30	135	2	1,043
Syracuse..... 7	Syracuse University				
	Colleges of Arts (Liberal and Fine) .....	4	27	5	426
	College of Medicine .....	4	26		41
	Total .....	8	53	5	467
Buffalo..... 8	University of Buffalo				
	Medical Department .....	9	30		230
	College of Pharmacy .....	6	10		58
	Total .....	15	40		288
Grand total..	Grand total .....	161	687	27	5,094

*a* Dudley Observatory also a department. No statistics reported.*b* School of Pedagogy also a department. No statistics reported.*c* Statistics for theological department, Seminary of Our Lady of Angels, included with collegiate department.*d* 8 university fellowships reported.*e* Some of the officers counted here are included in column 3 as one who is connected with both administration and instruction is counted under both heads. Administrative officers not exclusively connected with other departments are included under school of arts.*f* Including 5 general administrative officers and 27 officers and assistants in the library.*g* Of these 5 are counted twice.*h* Of these 13 are counted twice.*i* Not working for degrees.

1

## COLLEGIATE DEPARTMENTS UNDER ONE GOVERNMENT — SUMMARY OF STATISTICS

Unclassified students	Graduate students	Grand total of students	RESIDENTS OF			Total degrees conferred on examination past year	LIBRARY		No.
			New York	Other states	Foreign countries		Total volumes	Total pam- phlets	
6	7	8	9	10	11	12	13	14	1
.....	<i>a</i> 37	314	250	63	1	<i>e</i> 109	<i>f</i> 109,200	?	
.....	.....	466	324	125	7	10	A	A	
.....	.....	619	355	243	21	52	A	A	
.....	35	266	197	63	6	33	A	A	
.....	.....	98	87	10	1	A	A	A	
.....	72	<i>b</i> 1,753	1,213	504	36	204	<i>f</i> 109,200	?	
.....	.....	124	114	10	.....	21	26,911	?	2
.....	.....	50	40	10	.....	33	1,093	.....	
.....	.....	148	132	16	.....	37	? 5,000	?	
.....	.....	53	52	1	.....	17	75	67	
.....	.....	375	338	37	.....	108	33,079	67	
.....	100	225	151	72	2	38	? 12,000	.....	3
.....	.....	142	124	14	4	52	A	A	
.....	17	633	354	209	70	159	.....	.....	
2	4	164	71	86	7	.....	60,337	47,931	
2	121	1,164	700	381	83	249	72,337	47,931	
.....	.....	46	19	27	.....	?	6,000	.....	4
.....	.....	26	23	3	.....	15	.....	.....	
9	.....	49	43	5	1	15	500	100	
9	.....	121	85	35	1	30	6,500	100	
3	14	82	79	3	.....	22	<i>g</i> 9,748	? 5,000	5
4	4	30	10	20	.....	0	?	?	
7	18	<i>c</i> 112	89	23	.....	22	<i>g</i> 9,748	5,000	
184	<i>a</i> 92	1,223	760	415	48	214	<i>h</i> 108,138	30,000	6
.....	.....	96	67	24	5	39	A	A	
184	92	1,319	827	439	53	253	<i>h</i> 108,138	30,000	
69	129	624	<i>d</i> 430	62	7	49	37,888	4,086	7
6	1	48	41	7	.....	13	? 1,000	?	
75	130	672	471	69	7	62	38,888	4,086	
.....	.....	230	192	26	12	52	3,000	500	8
1	.....	59	50	8	1	16	17	85	
1	.....	289	242	34	13	68	3,017	585	
278	433	5,805	3,965	1,522	193	996	380,907	87,769	

*a* Including 8 fellows.*b* Of these 82 are counted twice.*c* Of these 2 are counted twice.*d* Residences of 125 graduate students not reported.*e* Including those conferred in School of Political Science.*f* Also 6,500 volumes and pamphlets deposited for use, not owned.*g* Also 898*h* Also 723



TABLE 1—

DEGREE-CONFERRING INSTITUTIONS REPORTING STATISTICS FOR TWO OR MORE

		SUMMARY OF						
	No.	Grounds	Buildings	Furniture	Apparatus	Library	Museum	Total prop- erty used
Colum	1	15 \$500,000 A 250,000 A A	16 \$1,000,000 A 700,000 A A	17 \$50,000 A ..... A A	18 \$100,000 A 11,000 ..... A	19 \$277,000 A ..... A A	20 \$208,328 A ..... A A	21 \$2,135,328 A 961,000 ..... A
		\$750,000	\$1,700,000	\$50,000	\$111,000	\$277,000	\$208,328	\$3,096,328
	2	\$100,000 ..... 15,000 ?	\$410,000 30,000 22,000 ?	? \$500 ? ?	\$25,000 ..... ? ?	\$30,616 2,325 ? 10,000 116	\$25,000 ..... ? 30,000 ? 200	? \$590,616 32,825 ? 77,000 ? 316
		\$115,000	\$462,000	\$500	\$25,000	\$43,057	\$55,200	\$700,757
Union	3	\$300,000 A ? 200,000	? \$200,000 A 326,074 150,000	? \$10,000 A ? 5,000	? \$20,000 A 20,000 .....	\$20,571 A ..... ?	\$5,500 A ? .....	\$556,071 A ? 346,074 40,000
		\$500,000	\$676,074	\$15,000	\$40,000	\$20,571	\$5,500	\$942,145
	4	\$24,000 ..... 30,500	\$208,760 ..... 10,000	? ..... \$400	\$4,000 ..... 4,000	\$10,000 ..... 1,500	? ..... .....	\$246,760 ..... 46,400
		\$54,500	\$218,760	\$400	\$8,000	\$11,500	?	\$293,160
St Law	5	\$20,000 10,000	\$80,000 25,000	\$1,000 500	\$925 200	\$12,906 ?	\$1,745 .....	\$116,576 40,000
		\$30,000	\$105,000	\$1,500	\$1,125	\$12,906	\$1,745	\$156,576
	6	\$99,093 A	\$934,871 A	\$15,923 A	\$249,967 A	\$154,793 A	\$110,764 A	\$1,565,412 A
		\$99,093	\$934,871	\$15,923	\$249,967	\$154,793	\$110,764	\$1,565,412
Syracu	7	\$200,000 9,000	\$602,000 8,000	\$50,000 2,000	\$38,400 1,400	\$76,385 2,000	\$43,500 ?	\$1,010,285 ? 22,400
		\$209,000	\$610,000	\$52,000	\$39,800	\$78,385	\$43,500	\$1,032,685
	8	\$55,000 .....	\$20,000 .....	\$4,000 410	\$5,000 3,203	\$5,000 ? 138	\$5,000 155	\$94,000 3,906
		\$55,000	\$20,000	\$4,410	\$8,203	\$5,138	\$5,155	\$97,906
Grand t		\$1,812,593	\$4,726,705	\$139,733	\$483,095	\$603,350	\$430,192	\$7,894,969

(Continued)

## COLLEGIATE DEPARTMENTS UNDER ONE GOVERNMENT—SUMMARY OF STATISTICS

PROPERTY				Receipts	Expenditures	No.
Investments	Total college property	Debts at end of year	Net property			
22	23	24	25	26	27	
\$8,132,680	\$10,268,008	\$1,240	\$10,266,768	\$566,479 03	\$458,420 81	1 Columbia
A	A	A	A	A	A	
391,818	1,352,818	.....	1,352,818	83,938 09	79,873 02	
A	A	A	A	A	A	
A	A	A	A	A	A	
\$8,524,498	\$11,620,826	\$1,240	\$11,619,586	\$650,417 12	\$538,293 83	
\$961,843	\$1,552,459	\$310,000	\$1,242,459	\$54,857 74	\$63,234 45	2 Union
.....	32,825	10,500	22,325	5,922 25	5,922 25	
? 7,888	? 84,888	12,000	? 72,888	12,508 92	12,542 98	
1,086	? 1,402	?	? 1,402	2,373 54	1,287 32	
\$970,817	\$1,671,574	\$332,500	\$1,339,074	\$75,662 45	\$82,987 00	
\$364,229	\$920,300	.....	\$920,300	\$148,686 00	\$50,323 00	3 U. C. N.
A	A	A	A	13,000 00	13,000 00	
? 200	? 346,274	\$89,300	256,974	61,100 00	61,100 00	
721,000	1,077,000	?	? 1,077,000	65,000 00	71,000 00	
\$1,085,429	\$2,343,574	\$89,300	\$2,254,274	\$287,786 00	\$195,423 00	
? \$800	? \$247,560	\$60,000	? \$187,560	\$40,300 00	? \$15,300 00	4 Niagara
.....	.....	.....	.....	3,006 50	3,006 50	
.....	46,400	13,750	32,650	3,732 50	2,298 82	
\$800	\$293,960	\$73,750	\$220,210	\$47,039 00	\$20,605 32	
\$155,088	\$271,665	\$7,412	\$264,253	\$13,349 55	\$12,009 68	5 St Lawr.
129,547	169,547	.....	169,547	24,099 57	7,845 32	
\$284,635	\$441,212	\$7,412	\$433,800	\$37,449 12	\$19,855 00	
\$4,854,688	\$6,420,100	.....	\$6,420,100	\$361,217 08	\$325,769 83	6 Cornell
A	A	A	A	A	A	
\$4,854,688	\$6,420,100	.....	\$6,420,100	\$361,217 08	\$325,769 83	
\$698,449	\$1,708,734	\$77,600	\$1,631,134	\$77,831 97	\$77,831 97	7 Syracuse
1,404	23,804	9,000	14,804	5,288 95	4,335 28	
\$699,853	\$1,732,538	\$86,600	\$1,645,938	\$83,120 92	\$82,167 25	
.....	\$94,000	.....	\$94,000	\$18,500 00	\$17,500 00	8 Buffalo
\$250	4,156	.....	4,156	3,941 04	3,690 56	
\$250	\$98,156	.....	\$98,156	\$22,441 04	\$21,190 56	
\$16,420,970	\$24,621,940	\$590,802	\$24,031,138	\$1,565,132 73	\$1,286,291 79	Grand tot



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## TABLE 2

[For general explanatory notes see page 1551]

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### STATISTICS OF COLLEGES<sup>1</sup>

OF

### ARTS AND SCIENCE

REPORTING TO THE

University of the State of New York for 1889-90

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<sup>1</sup>For statistics of colleges of arts and science not included here (because incomplete) see summary under name of each institution preceding these tables.



## TABLE

## COLLEGES OF ARTS AND

No.	NAME	LOCATION
		City or village and county
	<b>1</b>	<b>2</b>
1 Columbia	1 Columbia College .....	New York .....
2 Union ...	2 Union College .....	Schenectady .....
3 Hamilton	3 Hamilton College .....	Clinton, Oneida .....
4 Hobart ...	4 Hobart College .....	Geneva, Ontario .....
5 U.C.N.Y.	5 University of the City of New York...	New York .....
6 Colgate ..	6 Colgate University .....	Hamilton, Madison .....
7 St J's F.	7 St John's College .....	Fordham, New York .....
8 Roch'r...	8 University of Rochester .....	Rochester, Monroe .....
9 C.O.N.Y.	9 College of the City of New York .....	New York .....
10 St Steph.	10 St Stephen's College .....	Annandale, Dutchess .....
11 St F. X'r.	11 College of St Francis Xavier .....	New York .....
12 Manhat..	12 Manhattan College .....	New York .....
12a St Jos.	12a St Joseph's College .....	Buffalo, Erie .....
13 St J's B.	13 St John's College .....	Brooklyn, Kings .....
14 St Bonav.	14 St Bonaventure's College .....	Allegany, Cattaraugus .....
15 Canisius..	15 Canisius College .....	Buffalo, Erie .....
16 Niagara...	16 Niagara University ....	Niagara University, Niagara .....
17 St Fran...	17 St Francis College .....	Brooklyn, Kings .....

## COLLEGES OF ARTS AND

1 Elmira...	1 Elmira College .....	Elmira, Chemung .....
2 Ingham...	2 Ingham University .....	Le Roy, Genesee .....
3 Vassar...	3 Vassar College .....	Poughkeepsie, Dutchess .....
4 Rutgers ..	4 Rutgers Female College .....	New York .....
5 Wells ....	5 Wells College .....	Aurora, Cayuga .....
6 N.C.C.N.Y	6 Normal College of the City of New York	New York .....
7 Barnard...	7 Barnard College .....	New York .....

## COLLEGES OF ARTS AND

1 St Lawr....	1 St Lawrence University .....	Canton, St Lawrence .....
2 Alfred.....	2 Alfred University .....	Alfred Center, Allegany .....
3 Cornell ....	3 Cornell University .....	Ithaca, Tompkins .....
4 Syracuse...	4 Syracuse Univ. (Liberal and Fine Arts)	Syracuse, Onondaga .....

Total table 2

Totals 2 and 3

2

## SCIENCE FOR MEN

INCORPORATED		Denomi- nation	PRESIDENT	No.
By	Date			
3	4	5	6	
C	31 O 1754	Non-sect.	Seth Low, LL. D.	1
R	25 F 1795	Non-sect.	Harrison E. Webster, LL. D.	2
R	26 My 1812	Presbyt'n.	Rev. Henry Darling, D. D., LL. D.	3
R	8 F 1825	P. E.	Rev. E. N. Potter, S. T. D., LL. D., D. C. L.	4
L	18 Ap 1831	Non-sect.	John Hall, D. D., LL. D. (Chancellor)	5
L	26 Mr 1846	Baptist	N. Lloyd Andrews, Ph. D., LL. D. (Dean)	6
L	10 Ap 1846	R. C.	Rev. John Scully, S. J.	7
R	14 F 1851	Baptist	David J. Hill, LL. D.	8
L	15 Ap 1854	Non-sect.	Alexander S. Webb, LL. D.	9
L	20 Mr 1860	P. E.	Rev. R. B. Fairbairn, D. D., LL. D., (Wdn.)	10
R	10 Ja 1861	R. C.	Rev. David A. Merrick, S. J.	11
R	2 Ap 1863	R. C.	Rev. Brother Justin	12
T		R. C.	Rev. Brother Aelred (Director)	12a
L	29 S 1871	R. C.	Rev. J. A. Hartnett, C. M.	13
R	1 Mr 1875	R. C.	Very Rev. Joseph F. Butler, O. S. F.	14
R	11 Ja 1883	R. C.	Rev. Ulric Heinze, S. J.	15
R	7 Ag 1883	R. C.	Very Rev. P. V. Kavanagh	16
L	8 My 1884	R. C.	Brother Jerome, O. S. F.	17

## SCIENCE FOR WOMEN

L	13 Ap 1855	Presbyt'n.	Charles Van Norden, D. D.	1
L	3 Ap 1857	Non-sect.	Rev. W. W. Totheroh, D. D.	2
L	18 Ja 1861	Non-sect.	James M. Taylor, D. D.	3
L	11 Ap 1867	Non-sect.	George W. Samson, D. D., LL. D.	4
L	28 Mr 1868	Non-sect.	Edward S. Frisbee, D. D.	5
L	9 Je 1888	Non-sect.	Thomas Hunter	6
R	8 Ag 1889	Non-sect.		7

## SCIENCE FOR MEN AND WOMEN

L	3 Ap 1856	Non-sect.	Alpheus Baker Hervey, Ph. D.	1
L	28 Mr 1857	7th Day B.	J. Allen, Ph. D., D. D., LL. D.	2
L	27 Ap 1865	Non-sect.	Charles Kendall Adams, LL. D.	3
L	29 Mr 1870	M. E.	Rev. C. N. Sims, D. D., LL. D. (Chancellor)	4

TABLE 2—

COLLEGES OF ARTS AND

[EXPLANATION— a Required for admission to course for B. A. degree. s Required for admission to so marked

REQUIREMENTS																
No.	Certificates of moral character	Age	Spelling	Arithmetic	English language	GEOGRAPHY			Algebra	Geometry	Physiology	Drawing	HISTORY			
						Modern	Ancient	Physical					Grecian	Roman	Ancient	English
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	a	15	...	a	a	a	a	...	a <sup>1</sup>	a <sup>2</sup>	...	...	...	a	...	
2 <sup>3</sup>	e <sup>4</sup>	16	...	e <sup>4</sup>	e <sup>4</sup>	s <sup>4</sup>	...	e <sup>4,5</sup>	e <sup>4,6</sup>	...	...	...	...	...	...	
3	a	15	...	a	a	a	a	...	a <sup>5</sup>	a <sup>6</sup>	...	...	...	...	...	
4	e	...	...	e	e	e	e	e	e <sup>5</sup>	e <sup>7</sup>	...	...	a	a	...	
5	e	...	...	e	e	e	...	e <sup>10</sup>	e <sup>6</sup>	...	...	a	a	...	...	
6	e	15	...	e	e	...	...	e <sup>10</sup>	e <sup>6</sup>	...	...	e*	...	...	...	
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
8	e	...	...	e	e	...	...	e <sup>5</sup>	e <sup>7</sup>	...	...	...	...	...	...	
9	...	14	e	e	e	e	...	...	e <sup>6</sup>	...	e	...	...	...	...	
10	a	15	a	a	a	a	...	a <sup>10</sup>	a <sup>7</sup>	...	...	...	...	...	...	
11	a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12	a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
12a	a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

COLLEGES OF ARTS AND

1	...	...	...	a	a	a	a	...	a <sup>10</sup>	a <sup>6</sup>	...	...	...	...	...	a
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	a	16	...	a	a	...	...	a	a <sup>5</sup>	a <sup>6</sup>	...	...	a	a	...	a*
4	...	16	...	a	a	a	a	a	a <sup>5</sup>	a <sup>2</sup>	...	...	...	...	...	...
5	a	...	...	a	a	a	...	a	a <sup>5</sup>	a <sup>6</sup>	a	a	...	...	a	...
6	...	14	a	a	a	a	...	...	...	a <sup>6</sup>	...	a	...	...	...	...
7	a	16	...	a	a	a	a	...	a <sup>1</sup>	a <sup>2</sup>	...	...	...	...	a	...

COLLEGES OF ARTS AND

1	e <sup>4</sup>	...	...	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	...	...	e <sup>10,4</sup>	e <sup>6,4</sup>	e <sup>4</sup>	...	a	a <sup>4</sup>	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3 <sup>13</sup>	e <sup>4</sup>	16 <sup>14</sup>	...	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	a	e <sup>4</sup>	e <sup>5,4</sup>	e <sup>6,4</sup>	e <sup>15,4</sup>	...	a <sup>4</sup>	a <sup>4</sup>	...	...
4 <sup>17</sup>	...	...	...	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	e <sup>5,4</sup>	e <sup>6,4</sup>	e <sup>4</sup>	...	...	e <sup>4</sup>	...	...

1 5 chs Peck. 2 4 bks Davies' Legendre. 3 Information taken from catalogue of '90-'91. 4 The two works of Sallust may be substituted for Cæsar. 5 7 orations; also Virgil's Georgics, two bks. studies marked e), the Greek as given without the Latin, the Latin as given without the Greek, and the requirements identical with those in course for bachelor of letters degree; courses in engineering and archi study of medicine requires trigonometry, French or German and Latin with Greek enough for recognition and trigonometry may be substituted for one of these in admission to the science or philosophy course. Roman history and Latin, and with the addition of drawing; course in painting same as architecture with

(Continued)

## SCIENCE FOR MEN

course for B. S. degree. e Required for admission to either course. a\* or e\* Only one of two subjects is required]

## FOR ADMISSION

General	United States	English literature	German	French	Latin grammar	Latin composition	Latin prosody	CESAR		SALLUST		VIRGIL		Cicero's orations, 6	Greek grammar	No.
23	24	25	26	27	28	29	30	Five books	Four books	Catiline	Jugurtha	Æneid, 6 bks	Eclogues	37	38	
...	a <sup>4</sup>	a <sup>4</sup>	...	...	a	a	a	a	...	a	a*	a	a	a	a	1
...	a	...	...	...	a <sup>4</sup>	a <sup>4</sup>	...	...	a <sup>4</sup>	a*	a*	a <sup>4</sup>	a	a <sup>4</sup>	a	2
...	e	...	s	s	a	a	a	a <sup>8</sup>	...	a <sup>8</sup>	a <sup>8</sup>	a	a	a <sup>9</sup>	a	3
...	e	...	...	s	a	a	...	...	a	a*	...	a	a*	a	a	4
e*	e	...	...	...	a <sup>11</sup>	a	...	...	a	...	...	a	...	a	a <sup>11</sup>	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
e	...	...	...	...	e	e	e	...	e	...	...	e	...	e	a	7
...	e	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	a	a	...	...	a	...	a*	a	a*	a	a	9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12a
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17

## SCIENCE FOR WOMEN

...	a	...	...	...	a	a	a	...	a	...	...	a	a	a	a <sup>12</sup>	1
...	a*	...	...	...	a	a	...	...	a	...	...	a	a	a	a <sup>12</sup>	2
...	...	...	a*	a*	a	a	a	...	a*	a*	...	a	a	a	a	3
...	a	...	...	...	a	a	a	...	a	...	...	a	a	a	a <sup>12</sup>	4
...	a	...	...	...	a	a	a	a	...	a*	...	a	a*	a	a	5
...	...	...	...	...	a	a	a	a	...	a*	...	a	a*	a	a	6
...	...	...	...	...	a	a	a	a	...	a*	...	a	a*	a	a	7

## SCIENCE FOR MEN AND WOMEN

...	e <sup>4</sup>	...	...	...	a <sup>4</sup>	a <sup>4</sup>	a <sup>4</sup>	...	a <sup>4</sup>	...	...	a <sup>4</sup>	...	a <sup>4</sup>	a	1
...	e <sup>4</sup>	...	...	...	...	...	...	...	a <sup>4</sup>	...	...	a <sup>4</sup>	...	a <sup>4</sup>	...	2
...	e <sup>4</sup>	...	s <sup>16,4</sup>	s <sup>16,4</sup>	...	a <sup>4</sup>	a <sup>4</sup>	...	a <sup>4</sup>	a <sup>4</sup>	...	a <sup>4</sup>	a <sup>4</sup>	a <sup>4</sup>	...	3
...	e <sup>4</sup>	...	s <sup>4</sup>	...	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	...	e <sup>4</sup>	...	...	e <sup>4</sup>	e <sup>4</sup>	e <sup>4</sup>	a	4

4 Required also in course for Ph. B. degree. 5 Through quadratics. 6 Plane, complete. 7 Bks 1-6. 10 To quadratics. 11 Three courses lead to the degree of B. S., requiring respectively (in addition to elements of chemistry and physics. 12 French or German may be substituted for Greek. 13 B. S. tecture require the work in English, also solid geometry and French or German; course preparatory to of scientific terms. 14 Age for males; females 17. 15 Also hygiene. 16 Higher algebra, solid geometry 17 Requirements for course in architecture same as for B. S. course with the exception of physiology, exception of geometry and algebra; elementary physics required in all courses.



TABLE 2 —  
COLLEGES OF ARTS AND

No.	REQUIREMENTS FOR ADMISSION, <i>continued</i>						Entrance examinations held	1ST TERM	
	Greek composition	Greek prosody	ANABASIS		ILIAD			No. of weeks	Began
			Four books	Three books	Three books	Two books			
	39	40	41	42	43	44	45	46	47
1	a	a	a	.....	a	.....	30 S—5 O, 2-7 Je ..	17	7 O
2	.....	.....	.....	a	.....	a	27-28 Je, 16-17 S ..	?	18 S
3	a	.....	.....	a	.....	a	?	13	19 S
4	a	a	a	.....	a	.....	17 S, 24 Je.....	14	17 S
5	a	.....	a	.....	a	.....	23-26 S, 5-10 Je....	13	25 S
6	a	.....	.....	a	a	.....	17-18 Je, 10-12 S...	15	12 S
7	.....	.....	.....	.....	.....	.....	.....	21	4 S
8	a	.....	.....	a	a	.....	9 S.....	14	10 S
9	.....	.....	.....	.....	.....	.....	3-5 Je .....	19	12 S
10	.....	a	.....	a	a	.....	17 Je, 13 S .....	14	12 S
11	.....	.....	.....	.....	.....	.....	2 S.....	21	2 S
12	.....	.....	.....	.....	.....	.....	2 S.....	21	1 S
12a	.....	.....	.....	.....	.....	.....	?	?	?
13	.....	.....	.....	.....	.....	.....	.....	10	8 S
14	.....	.....	.....	.....	.....	.....	5-6 S.....	21	5 S
15	.....	.....	.....	.....	.....	.....	1-5 S.....	20	4 S
16	.....	.....	.....	.....	.....	.....	10 S.....	20	11 S
17	.....	.....	.....	.....	.....	.....	?	10	3 S

COLLEGES OF ARTS AND

1	a	.....	a	.....	.....	a	11 S	18	12 S
2	.....	.....	.....	.....	.....	.....	12 S	20	12 S
3	a	.....	a	.....	.....	a	S, Je	17	20 S
4	.....	a	a	.....	.....	a	25, 26 S	10	25 S
5	a	.....	a	.....	.....	a	10, 11 S, 28 Ja	20	11 S
6	.....	.....	.....	.....	.....	.....	2-7 Je	20	?
7	a	a	a	.....	a	.....	30 S, 5 O, 2-7 Je	17	7 O

COLLEGES OF ARTS AND

1	.....	a	a	.....	a	.....	9-10 Je, 10-11 S	20	11 S
2	.....	.....	.....	.....	.....	.....	?	13	28 Ag
3	.....	.....	.....	.....	a <sup>1</sup>	.....	14-18 Je, 19-23 S	13	24 S
4	a	.....	.....	a	a	.....	16-18 S, 23-25 Je	13	19 S

1 100 pp. of Attic prose also required

(Continued)

## SCIENCE FOR MEN

## CALENDAR FOR PAST YEAR

2D TERM		3D TERM		4TH TERM		COMMENCEMENT		End of academic fiscal year	ACTUALLY IN SESSION		No.
No. of weeks	Began	No. of weeks	Began	No. of weeks	Began	June 1890	June 1891		Weeks	Days	
48	49	50	51	52	53	54	55	56	57		
16	6 F	.....	.....	.....	.....	11	10	30 Je	32	5	1
?	7 Ja	?	8 Ap	.....	.....	25	24	?	35	?	2
12	9 Ja	11	10 Ap	.....	.....	26	25	26 Je	36		3
22	9 Ja	.....	.....	.....	.....	26	25	1 Ap	35	1	4
13	23 D	12	24 Mr	.....	.....	12	11	31 Ag	34	5	5
11	6 Ja	11	3 Ap	.....	.....	19	18	17 Je	35	6	6
21	1 F	.....	.....	.....	.....	26	24	1 Je	34	2	7
12	6 Ja	10	3 Ap	.....	.....	18	17	1 Je	36	2	8
21	27 Ja	.....	.....	.....	.....	19	18	19 Je	35	6	9
13	3 Ja	9	14 Ap	.....	.....	19	18	19 Je	37	1	10
20	26 Ja	.....	.....	.....	.....	30	22	14 Je	41		11
21	1 F	.....	.....	.....	.....	27	26	30 Je	38	6	12
?	?	?	?	?	?	?	?	?	?	?	12a
10	15 N	10	1 F	10	15 Ap	24	23	24 Je	40		13
21	31 Ja	.....	.....	.....	.....	24	23	31 Jl	38	5	14
20	3 F	.....	.....	.....	.....	23	22	23 Je	41		15
20	3 F	.....	.....	.....	.....	25	24	1 Ja	40		16
11	15 N	10	1 F	10	15 Ap	26	25	26 Je	39		17

## SCIENCE FOR WOMEN

16	3 F	.....	.....	.....	.....	11	16	10 Je	34	6	1
20	30 Ja	.....	.....	.....	.....	18	17	18 Je	40		2
17	3 F	.....	.....	.....	.....	11	10	31 Jl	33	2	3
9	3 D	9	4 F	9	8 Ap	12	11	21 Je	35	2	4
20	29 Ja	.....	.....	.....	.....	18	17	15 Jl	35	4	5
20	?	.....	.....	.....	.....	26	25	26 Je	39	6	6
17	6 F	.....	.....	.....	.....	.....	.....	7 Je	32		7

## SCIENCE FOR MEN AND WOMEN

18	3 F	.....	.....	.....	.....	11	18	31 My	35	2	1
13	11 D	13	26 Mr	.....	.....	26	25	26 Je	39	1	2
11	3 Ja	10	1 Ap	.....	.....	19	18	1 Ag	34	1	3
12	7 Ja	11	8 Ap	.....	.....	25	24	1 Je	36	1	4

TABLE 2—  
COLLEGES OF ARTS AND

No.	CALENDAR FOR PAST YEAR					TRUSTEES							
	IN LONG VACA-TIONS		IN OTHER VACA-TIONS		Holidays closed	Number in full board	Number in quorum	Number of present vacancies	VACANCIES OCCURRING BY				Appointed this year
	Weeks	Days	Weeks	Days					End of term	Death	Resignation	Removal	
58	59	60	61	62	63	64	65	66	67	68			
1	16	4	2		6	24	11	2		2	1		3
2	17	?		?	?	22	?		1				1
3	12		4	1		28	13			2			4
4	11	4	4	3		7	22	9	1				1
5	14				24	32	11		1		1		4
6	12		3	2	7	27	9	3			2		1
7	9	5	2	1	42	9	6				2		1
8	12		2	6	7	24	13	3		2			
9	12	1	3	4	4	22	11		5				5
10	11	6	3	1	7	24	6						
11	9		2	1		12	?						
12	8	6	3	2	8	18	7	1		1			
12a	?		?	?	?	1	1	1	1	1	1	1	1
13	9	1	2	3	4	4	3						
14	10		2		10	10	6						
15	10	2	1	3	?	10	6						
16	10		1	3	5	10	6				1		1
17	9	5	2	5	5	12	7						
Total.....						310	124	9	8	7	7	.....	21

COLLEGES OF ARTS AND												
1	13	1	4	1		19	10					
2	10		2		1	14	8					
3	14	1	4		5	29	9			2		2
4	14	3	2	1	2	18	7	2		1	3	1
5	12		4	3	1	17	9					1
6	10	2	2		?	22	?	?	2	2	6	?
7	17	2	1	6	7	24	7	2				
Total.....						143	50	4	2	5	9	1

COLLEGES OF ARTS AND												
1	13		3	1	5	24	11	2	...	1	1	...
2	9		4		2	33	11		2	1		...
3	13	4	3	6	4	23	?		1	1		...
4	12	1	3	3	3	43	11		1	1		...
Total.....						123	33	2	4	4	1	...
Grand total.....						576	207	15	14	16	17	1
Grand total including professional schools .....						1,153	433	33	18	34	31	1

1 Same as for Manhattan College. 2 Including 5 general administrative officers and 27 officers and house and 4 mechanics. 4 Including 5 tutors. 5 Including faculty of all departments as reported faculty, and others who do give instruction have not, e. g. assistants, etc. This column simply shows total

(Continued)

## SCIENCE FOR MEN

ADMINISTRATION		OFFICERS OF INSTRUCTION								No.
Officers and clerical assistants	Other employees	Professors	Adjuncts	Instructors	Assistants	Lecturers	TOTAL NO. OF INSTRUCTORS		Total no. of seats in faculty	
							Men	Women		
69	70	71	72	73	74	75	76	77	78	
237	332	16	4	12	15	0	47	0	20	1
28	21	12	2	1	2	0	17	0	?	2
5	3	13	0	0	2	0	15	0	14	3
5	3	8	0	4	0	4	16	0	8	4
7	1	13	4	1	0	14	32	0	17	5
5	.....	11	1	0	1	1	14	0	13	6
9	3	10	7	7	5	0	29	0	23	7
5	3	11	0	1	0	0	12	0	11	8
?	?	13	0	31	0	0	42	0	13	9
8	13	4	2	0	0	2	8	0	6	10
4	.....	11	0	0	0	3	14	0	14	11
7	30	14	2	0	0	1	17	0	16	12
3	?	0	0	10	0	0	10	0	?	12a
23	?	11	0	0	0	0	11	0	?	13
6	15	14	0	0	0	0	14	0	10	14
6	?	13	?	?	?	?	530	0	?	15
5	?	9	0	0	0	0	9	0	9	16
4	?	10	2	7	0	0	19	0	6	17
127	104	193	24	74	25	25	356	0	180	

## SCIENCE FOR WOMEN

5	18	17	0	0	0	0	8	9	17	1
6	?	?	?	?	?	?	1	12	?	2
6	108	12	3	6	0	10	9	22	22	3
3	.....	10	0	5	0	2	4	13	10	4
5	20	10	0	3	0	3	6	10	14	5
5	2	8	0	31	0	0	7	32	7	6
2	2	0	0	9	1	0	8	2	10	7
32	150	57	3	54	1	15	43	100	80	

## SCIENCE FOR MEN AND WOMEN

5	1	7	0	0	0	0	7	0	7	1
6	?	20	0	2	0	0	14	8	20	2
27	216	29	22	43	3	25	122	0	51	3
4	4	12	0	15	0	0	23	4	12	4
42	21	68	22	60	3	25	166	12	90	
201	275	318	49	188	29	65	565	112	350	
374	404	730	77	413	304	217	1,647	169	657	

assistants in the library.

3 Including 8 general administrative officers, 6 in the library, 8 in the boiler-  
in catalogue of 1889-'90. 6 In some colleges officers, e. g. president, not giving instruction, have a seat in  
number entitled to seats in faculty meeting.



TABLE 2—  
COLLEGES OF ARTS AND

OFFICERS OF INSTRUCTION, <i>continued</i>									NUMBER AND	
No.	VACANCIES OCCURRING BY				Appointed this year	PROMOTIONS			BY	
	End of term	Death	Resignation	Removal		In title alone	In salary alone	In both title and salary	Freshman 1st year	Sophomore 2d year
	79	80	81	82	83	84	85	86	87	89
1		1	1		7	5	3	2	102	66
2					1				58	30
3		1			2				36	44
4			1		3				31	18
5	1				1				46	25
6		1	1		1			1	36	28
7			15		25				45	41
8		1							44	39
9			1		5				316	124
0			3		4				12	9
11	5				5				26	32
12			1						31	29
12a					3				16	7
13									27	14
14									25	12
15			6		2				19	
16			2						11	13
17	2		2		2				8	3
	8	4	33		61	5	3	3	889	534

COLLEGES OF ARTS AND										
1	....	....	3	....	5	....	....	....	21	10
2	....	....	3	....	2	....	....	....	11	2
3	....	2	5	....	3	1	....	....	73	117
4	....	1	....	....	2	....	....	....	8	7
5	....	....	1	....	2	....	1	....	9	9
6	....	....	....	....	....	....	....	....	156	136
7	....	....	....	....	11	....	....	....	23	0
	....	3	12	....	25	1	1	...	301	281

COLLEGES OF ARTS AND												
									Men 87	Women 88	Men 89	Women 90
1	....	....	1	....	....	1	....	....	4	10	10	3
2	....	....	1	....	1	....	....	....	29	16	24	15
3	....	1	17	....	11	7	....	....	295	39	241	26
4	1	....	1	....	6	....	6	....	85	138	63	52
<hr/>												
	1	1	20	....	18	8	6	....	413	203	338	96
<hr/>												
	9	8	65	?	104	14	10	3	1,302	504	872	377
<hr/>												
	9	15	78	3	159	43	17	9	3,381	573	1,191	381

1 Including 8 in the collegiate course for

(Continued)

## SCIENCE FOR MEN

## CLASSIFICATION OF STUDENTS IN REGULAR COURSES FOR DEGREES

CLASSES		BY COURSES			No.
Junior 3d year	Senior 4th year	Arts — B. A.	Science — B. S.	Philosophy Ph. B.	
91	93	95	97	99	
56	45	277	0	0	1
13	23	124	0	0	2
28	37	146	0	0	3
11	7	40	0	0	4
26	28	48	77	0	5
26	31	97	24	0	6
26	27	69	70	0	7
27	25	103	0	32	8
81	65	231	298	0	9
11	13	45	0	0	10
19	12	89	0	0	11
35	24	119	0	0	12
4	0	27	0	0	12a
12	2	55	0	0	13
8	15	60	0	0	14
10	13	42	0	0	15
16	6	46	0	0	16
6	5	22	0	0	17
415	378	1,640	469	32	

## SCIENCE FOR WOMEN

15	13	56	3	0	1
3	5	0	21	0	2
35	47	272	0	0	3
3	4	11	0	0	4
8	5	28	3	0	5
52	0	344	0	0	6
0	0	3	0	0	7
116	74	714	27	0	

## SCIENCE FOR MEN AND WOMEN

Men 91	Women 92	Men 93	Women 94	Men 95	Women 96	Men 97	Women 98	Men 99	Women 100	
15	1	15	2	12	3	41	18	1	4	1
21	15	20	11	19	13	15	0	48	32	2
163	24	146	13	86	25	46	23	34	23	3
34	28	11	15	86	19	29	17	32	33	4
233	68	192	41	203	60	131	58	115	92	
648	184	570	115	1,843	774	600	85	147	92	
1,745	261	1,862	180			602				

women who are not arranged by classes.

TABLE 2 —

COLLEGES OF ARTS AND

No.	NUMBER AND CLASSIFICATION OF STUDENTS				
	BY COURSES	Total in regular courses for degrees	Unclassified students of college grade	Graduates not fellows	Fellows
	Other degrees				
	101	103	105	107	109
1	0	277	.....	229	8
2	0	124	.....	.....	.....
3	0	145	7	.....	.....
4	27	67	.....	.....	.....
5	0	125	.....	100	.....
6	0	121	16	.....	.....
7	0	139	.....	.....	.....
8	0	135	50	.....	.....
9	57	586	.....	.....	.....
10	0	45	15	13	.....
11	0	89	.....	.....	.....
12	0	119	.....	21	.....
12a	0	27	.....	.....	.....
13	0	55	.....	4	.....
14	0	60	.....	37	.....
15	0	42	25	.....	.....
16	0	46	.....	2	.....
17	0	22	.....	.....	.....
	84	2,224	113	206	8

## COLLEGES OF ARTS AND

1	0		59	.....	.....	.....
2	0		21	118	5	.....
3	57		272	46	5	.....
4	11		22	18	.....	.....
5	0		31	4	.....	.....
6	0		344	1,246	271	18
7	20		23	11	2	.....
	88		772	1,443	283	18

## COLLEGES OF ARTS AND

	Men 101	Women 102	Men 103	Women 104	Men 105	Women 106	Men 107	Women 108	Men 109	Women 110
1	0	0	45	20	2	1	9	5	.....	.....
2	12	12	94	57	3	3	8	4	.....	.....
3	679	31	845	102	136	48	72	12	8	.....
4	46	168	193	233	42	27	? 116	? 13	.....	.....
	737	211	1,177	412	183	79	205	34	8	.....
	821	299	3,401	1,184	296	1,522	411	317	16	18
	5,429	514	8,330	1,399	456	1,678	1,516	350		

1 Normal course not leading to a degree.  
2 Including 2 women.

(Continued)

## SCIENCE FOR MEN

Grand total of college grade	Sub-freshman and lower grades	RESIDENTS OF					No.
		New York	Me.	N. H.	Vt.	Mass.	
111	113	115	117	118	119	120	
314	.....	250	....	....	1	....	1
124	.....	114	....	....	....	1	2
152	.....	133	....	....	....	1	3
67	.....	47	....	1	....	1	4
225	.....	151	2	1	1	13	5
137	.....	85	....	....	3	9	6
139	188	203	....	1	....	13	7
185	.....	155	2	1	....	2	8
586	537	586	....	....	....	....	9
73	.....	35	....	....	....	....	10
89	234	314	....	....	....	....	11
140	196	? 118	....	2	....	5	12
27	143	27	....	....	....	....	12a
59	.....	59	....	....	....	....	13
97	101	58	....	....	....	5	14
67	231	209	....	....	....	4	15
48	97	19	....	....	....	....	16
22	.....	19	....	....	....	2	17
2,551	1,727	2,582	4	6	5	46	

## SCIENCE FOR WOMEN

59	87	35	....	....	....	....	1
144	27	105	....	....	....	3	2
323	.....	127	2	2	6	18	3
40	55	27	....	....	....	....	4
35	24	11	....	....	....	....	5
1,879	.....	1,879	....	....	....	....	6
36	.....	32	....	....	....	....	7
2,516	193	2,216	2	2	6	21	8

## SCIENCE FOR MEN AND WOMEN

Men 111	Women 112	Boys 113	Girls 114	Men 115	Women 116					
56	26	.....	....	53	26	....	....	....	....	1
105	64	.....	....	51	41	....	....	....	....	2
1,061	162	.....	....	662	98	3	6	5	34	3
351	273	11	97	? 197	233	....	....	9	4	4
1,573	525	11	97	963	398	3	6	14	38	
4,124	3,041	1,738	290	3,545	2,614	9	14	25	105	
10,454	4,065			6,998	3,423	54	53	63	268	

1 Including 1 woman.

2 Residence of 125 non-resident graduate students not reported.



TABLE 2—  
COLLEGES OF ARTS AND

No.	RESIDENTS OF									
	R. I.	Ct.	Pa.	N. J.	North Atlantic states	Del.	Md.	D. C.	W. Va.	Va.
	<b>121</b>	<b>122</b>	<b>123</b>	<b>124</b>	<b>125</b>	<b>127</b>	<b>128</b>	<b>129</b>	<b>130</b>	<b>131</b>
1	....	2	1	49	53	....	....	....	....	....
2	2	1	....	....	4	....	....	....	....	....
3	....	....	3	1	5	....	....	1	....	....
4	....	1	2	....	5	....	4	1	....	....
5	....	2	14	47	60	1	....	....	....	....
6	....	3	3	10	28	1	....	....	....	....
7	3	6	26	8	57	....	1	5	1	1
8	....	....	2	3	10	1	....	....	....	....
9	....	....	....	....	....	....	....	....	....	....
10	2	....	9	5	16	1	....	....	....	....
11	....	....	....	....	....	....	....	....	....	....
12	4	3	....	4	18	....	....	....	....	....
12a	....	....	....	....	....	....	....	....	....	....
13	....	....	....	....	....	....	....	....	....	....
14	1	25	55	4	90	....	....	....	....	....
15	....	....	16	....	20	....	....	....	....	....
16	....	8	3	....	11	....	....	....	....	....
17	....	....	....	1	3	....	....	....	....	....
	12	51	124	132	380	4	5	7	1	1

COLLEGES OF ARTS AND										
1	....	....	7	3	10	....	....	....	....	....
2	....	2	4	....	9	....	....	....	....	....
3	5	13	18	23	87	....	....	2	....	1
4	....	....	1	5	6	....	....	....	....	....
5	....	....	2	3	5	....	....	....	1	....
6	....	....	....	....	....	....	....	....	....	....
7	....	....	....	4	4	....	....	....	....	....
	5	15	32	38	121	....	....	2	1	1

COLLEGES OF ARTS AND										
					Men 125	Women 126				
1	....	....	....	....	....	....	....	....	....	....
2	2	1	18	12	21	12	....	....	18	....
3	9	13	86	24	161	19	2	10	21	7
4	....	3	23	5	29	15	....	....	....	....
	11	17	127	41	211	46	2	10	21	7
	28	83	283	211	591	167	6	15	30	9
	68	283	512	728	1,725	310	12	35	57	63

1 Including 1 woman.

(Continued)

## SCIENCE FOR MEN

RESIDENTS OF										No.
N. C.	S. C.	Ga.	Fla.	South Atlantic states	Ala.	Miss.	La.	Tex.	I. T.	
132	133	134	135	136	138	139	140	141	142	
....	1	....	....	1	....	1	1	1	....	1
1	1	....	....	2	....	....	....	....	1	2
....	....	....	1	2	....	....	....	....	....	3
....	5	....	....	10	....	....	....	....	....	4
....	....	....	1	2	....	....	....	1	....	5
1	....	....	....	2	....	....	....	....	....	6
....	....	2	....	10	....	....	....	2	....	7
1	....	....	....	2	....	....	....	....	....	8
....	....	....	....	....	....	....	....	....	....	9
....	2	....	....	3	....	....	....	....	....	10
....	....	....	....	....	....	....	....	....	....	11
....	....	....	....	....	....	....	....	....	....	12
....	....	....	....	....	....	....	....	....	....	12a
....	....	....	....	....	....	....	....	....	....	13
....	....	....	....	....	....	....	....	1	....	14
....	....	....	....	....	....	....	....	....	....	15
....	....	....	....	....	....	....	....	....	....	16
....	....	....	....	....	....	....	....	....	....	17
3	9	2	2	34	....	1	1	5	1	

## SCIENCE FOR WOMEN

1	1	....	....	2	....	....	....	1	....	1
....	....	....	....	....	....	....	....	....	....	2
....	....	1	....	4	....	1	....	1	....	3
2	....	....	....	2	....	1	....	....	....	4
....	....	....	....	1	....	....	....	....	....	5
....	....	....	....	....	....	....	....	....	....	6
....	....	....	....	....	....	....	....	....	....	7
3	1	1	....	9	....	2	....	2	....	

## SCIENCE FOR MEN AND WOMEN

				Men 136	Women 137						
....	....	....	....	....	....	....	....	....	....	....	1
....	....	....	1	13	6	....	....	....	....	....	2
1	3	....	1	43	5	2	....	3	5	....	3
....	....	....	....	....	....	....	....	....	....	....	4
1	3	....	2	56	11	2	....	3	5	....	
7	13	3	4	90	20	2	3	4	12	1	
59	37	57	18	352	32	38	25	20	92	1	

TABLE 2 —  
COLLEGES OF ARTS AND

No.	RESIDENTS OF									
	Ark.	Tenn.	Ky.	South central states	Ohio	Ind.	Ill.	Mich.	Wis.	Minn.
	143	144	145	146	148	149	150	151	152	153
1	....	....	1	4	....	....	3	....	....	1
2	....	....	....	1	....	....	1	....	....	2
3	....	1	....	1	....	....	2	....	....	....
4	....	....	....	....	1	1	1	....	....	1
5	....	....	1	2	....	....	....	1	1	....
6	....	1	....	1	1	1	1	3	....	7
7	1	....	1	4	1	....	2	....	....	2
8	....	....	....	....	5	1	....	2	3	2
9	....	....	....	....	....	....	....	....	....	....
10	....	1	....	1	....	....	1	....	1	....
11	....	....	....	....	....	....	....	....	....	....
12	....	....	....	....	1	....	....	....	....	1
12a	....	....	....	....	....	....	....	....	....	....
13	....	....	....	....	....	....	....	....	....	....
14	....	....	1	2	3	....	1	....	....	....
15	....	....	1	1	38	....	11	4	1	5
16	....	....	....	....	4	....	5	4	3	....
17	....	....	....	....	....	....	....	....	....	....
	1	3	5	17	54	3	28	14	9	21

COLLEGES OF ARTS AND										
1	....	....	....	1	....	....	1	3	1	....
2	....	....	....	....	....	....	1	2	....	....
3	....	5	4	11	23	1	22	11	3	7
4	....	....	....	1	1	....	....	....	....	....
5	....	....	....	....	6	1	1	2	5	....
6	....	....	....	....	....	....	....	....	....	....
7	....	....	....	....	....	....	....	....	....	....
Sum	....	5	4	13	30	2	25	18	9	7

COLLEGES OF ARTS AND										
				Men 146	Women 147					
1	....	....	....	....	....	....	1	....	1	....
2	....	....	....	....	....	2	2	....	4	5
3	2	1	5	17	1	68	11	47	17	14
4	....	2	....	2	....	1	6	2	....	2
	2	3	5	19	1	71	17	52	17	21
	3	11	14	36	14	155	22	105	49	39
	16	53	76	306	15	290	83	173	92	72

(Continued)

## SCIENCE FOR MEN

RESIDENTS OF										No.
Iowa	Mo.	North central states	Kan.	Neb.	S. D.	N. D.	Mont.	Wy.	Col.	
154	155	156	158	159	160	161	162	163	164	
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	2
1	.....	3	2	1	.....	.....	.....	.....	.....	3
.....	.....	4	1	.....	.....	.....	.....	.....	.....	4
2	2	6	1	.....	.....	.....	.....	.....	1	5
.....	.....	13	.....	1	2	.....	.....	.....	.....	6
.....	1	6	.....	2	.....	.....	.....	.....	.....	7
1	.....	14	1	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	1	3	.....	.....	.....	.....	.....	.....	.....	10
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12a
.....	.....	4	.....	.....	.....	.....	.....	.....	.....	13
7	.....	66	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	16	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
11	4	144	5	4	2	.....	.....	.....	1	

## SCIENCE FOR WOMEN

.....	.....	5	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	3	.....	.....	1	.....	.....	.....	.....	2
2	8	77	1	3	1	.....	.....	.....	2	3
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	4
1	2	18	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
3	10	104	1	3	2	.....	.....	.....	2	

## SCIENCE FOR MEN AND WOMEN

		Men 156	Women 157							
.....	.....	2	.....	.....	.....	.....	.....	.....	1	1
1	.....	14	.....	1	1	1	.....	.....	.....	2
8	9	161	15	4	1	2	.....	.....	7	3
.....	1	3	10	.....	1	.....	1	.....	.....	4
9	10	180	25	5	3	3	1	.....	.....	8
23	24	324	129	11	10	7	1	.....	.....	11
68	92	797	146	42	29	11	3	10	3	29





(Continued)

## SCIENCE FOR MEN

RESIDENTS OF										No.
Pacific states	British America	Mexico	Central America	West Indies	South America	Europe	Asia	Africa	Oceannica	
176	178	179	180	181	182	183	184	185	186	
1	...	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	1	4	...	...	3
...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	1	1	...	...	5
...	...	...	...	...	...	1	3	...	...	6
1	5	14	13	5	2	5	...	...	...	7
1	...	...	...	...	...	2	...	...	...	8
...	...	...	...	...	...	...	...	...	...	9
2	...	...	...	...	...	...	...	...	...	10
...	...	...	...	...	...	...	...	...	...	11
...	1	...	...	...	...	1	...	...	...	12
...	...	...	...	...	...	...	...	...	...	12a
...	...	...	...	...	...	7	...	...	...	13
...	1	...	...	...	...	1	...	...	...	14
...	...	...	...	...	...	...	...	...	...	15
...	...	...	...	...	...	...	...	...	...	16
...	...	...	...	...	...	...	...	...	...	17
5	7	14	13	5	2	20	8	...	...	

## SCIENCE FOR WOMEN

...	1	...	...	...	...	2	3	...	...	1
...	...	...	...	...	...	...	...	...	...	2
9	1	...	...	...	...	...	...	...	...	3
...	...	...	...	1	...	1	1	...	...	4
...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	7
9	2	...	...	1	...	3	4	...	...	

## SCIENCE FOR MEN AND WOMEN

Men 176	Women 177									
...	...	...	...	...	...	...	...	...	...	1
1	...	...	...	...	...	...	2	...	...	2
6	1	19	...	3	5	3	7	9	...	3
1	...	2	...	...	...	1	1	3	...	4
8	1	21	...	3	5	4	8	14	...	2
13	10	30	14	16	11	6	31	26	...	2
101	15	217	20	37	41	30	91	69	?	6

TABLE 2—  
COLLEGES OF ARTS AND

No.	RESIDENTS OF		FIRST DEGREES				
	Foreign countries	B. A.		B. S.		PH. B.	
		During year	Total from origin	During year	Total from origin	During year	Total from origin
	187	189	191	192	194	195	197
1	1	243	2,956	.....	4	228	247
2	.....	16	?	.....	?	.....	?
3	5	36	2,543	?	?	.....	.....
4	.....	7	542	.....	87	.....	.....
5	2	13	?	15	?	.....	?
6	4	29	?	4	?	1	?
7	44	15	?	6	?	.....	.....
8	2	21	926	4	69	.....	.....
9	.....	19	870	33	530	.....	.....
10	.....	13	208	.....	?	.....	?
11	.....	12	2500	?	?	?	?
12	2	20	342	1	5	.....	.....
12a	.....	.....	.....	.....	.....	.....	.....
13	.....	1	20	?	?	?	?
14	7	3	34	?	?	?	?
15	2	.....	36	.....	.....	.....	.....
16	.....	2	56	.....	.....	.....	.....
17	.....	5	31	.....	.....	.....	.....
	69	255	9,064	63	695	29	247

COLLEGES OF ARTS AND							
1	6	11	315	2	2	?	?
2	.....	.....	?	.....	.....	.....	.....
3	1	46	891	.....	?	.....	.....
4	3	2	97	.....	.....	.....	.....
5	.....	5	63	.....	32	.....	?
6	.....	?	?	?	?	?	?
7	.....	.....	.....	.....	.....	.....	.....
	10	64	1,366	2	34	?	?

COLLEGES OF ARTS AND										
	Men 187	Women 188	Men 189	Women 190		Men 192	Women 193		Men 195	Women 196
1	.....	.....	2	.....	64	12	2	141	.....	2
2	1	1	4	2	120	2	.....	8	12	8
3	48	.....	14	6	212	41	5	603	12	1
4	2	5	10	3	306	1	1	63	5	4
	51	6	30	11	702	56	8	815	29	15
	120	16	285	75	11,132	119	10	1,544	58	15
	494	26	.....	.....	.....	.....	.....	.....	.....	.....

1 See foot notes 3 and 4. 2 Including degrees conferred in School of Mines and School of Polytechnic Institute of Brooklyn. 4 This total is larger than the footings by 9, of which Drew Seminary Mus. B. 5 This includes the 15 degrees explained in notes 3 and 4 above. 6 Including 2 women.

(Continued)

## SCIENCE FOR MEN

ON EXAMINATION				HIGHER DEGREES ON EXAMINATION		No.
ALL OTHERS		Total during year	Grand total from origin	M. A.		
During year	Total from origin			During year	Total from origin	
198	200	201	203	204	206	
.....	5	71	3,212	623	168	1
5	?	21	?	?	?	2
.....	.....	36	2,693	.....	.....	3
4	6	11	635	.....	.....	4
1	?	29	21,000	.....	?	5
?	?	34	1,041	.....	.....	6
.....	.....	21	?	8	?	7
.....	3	25	998	?	?	8
.....	6	52	1,406	6	267	9
1	?	14	2218	5	79	10
?	?	?	?	.....	.....	11
.....	.....	21	347	.....	.....	12
.....	.....	.....	.....	.....	.....	12a
?	?	21	220	6	7	13
?	?	?	?	2	3	14
.....	.....	?	36	.....	1	15
.....	.....	2	56	?	?	16
.....	.....	5	31	.....	.....	17
11	20	343	11,693	50	525	.

## SCIENCE FOR WOMEN

?	?	13	317	1	215	1
.....	.....	.....	?	.....	.....	2
?	?	246	?	4	40	3
2	28	4	2125	1	?	4
.....	?	5	95	.....	?	5
?	?	?	?	?	?	6
.....	.....	.....	.....	.....	.....	7
2	28	68	537	6	55	

## SCIENCE FOR MEN AND WOMEN

Men 198	Women 199	Men 201	Women 202	Men 204	Women 205		
.....	.....	23	14	4	230	.....	1
5	4	323	23	14	653	3	2
138	4	142	205	16	1,701	5	3
3	10	119	19	18	600	4	4
146	18	607	261	52	3,184	12	5
157	20	655	604	120	15,414	62	11
1,317	63	23,264	21,769	2173	239,111	.....	.....

Political Science. 3 This total is larger than the footings by 6, 3 B. A. and 3 B. S. conferred by and Female College conferred 6 L. L. L. (lady of liberal learning) and Claverack College 2 B. A. and 1



TABLE 2—  
COLLEGES OF ARTS AND

No.	HIGHER DEGREES ON EXAMINATION						
	M. S.		PH. D.		ALL OTHERS		Total during year
	During year	Total from origin	During year	Total from origin	During year	Total from origin	
	207	209	210	212	213	215	216
1	.....?	.....?	15	101	.....?	3	38
2	.....?	.....?	?	?	.....?	?	?
3	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....
5	1	?	8	?	.....	.....	9
6	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	29
8	?	?	?	?	?	?	?
9	2	59	.....	.....	.....	.....	8
10	0	?	.....	?	.....	?	5
11	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....
12a	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	6
14	?	?	?	?	?	?	?
15	.....	.....	.....	.....	.....	.....	.....
16	?	?	?	?	?	?	?
17	.....	.....	.....	.....	.....	.....	.....
	3	59	23	101	?	3	95

COLLEGES OF ARTS AND						
1	?	?	?	?	?	?
2	.....	.....	.....	.....	.....	.....
3	.....	?	.....	?	2	4
4	.....	.....	.....	.....	.....	1
5	.....	?	.....	?	?	0
6	?	?	?	?	?	?
7	.....	.....	.....	.....	.....	.....
	?	?	?	?	2	5

COLLEGES OF ARTS AND											
	Men 207	Women 208		Men 210	Women 211		Men 213	Women 214		Men 216	Women 217
1	....	1	2	....	.....	1	?	?	?	....	1
2	?	?	?	3	.....	3	2	2	14	8	4
3	5	2	46	2	.....	16	15	....	45	27	5
4	1	....	4	6	1	102	....	....	11	11	1
<hr/>											
	6	3	52	11	1	122	17	2	70	46	11
<hr/>											
	9	3	111	34	1	223	17	2	75	141	16
<hr/>											
	....	....	....	....	....	....	....	....	....	....	....

1 Including degrees conferred in School

(Continued)

## SCIENCE FOR MEN

IN COURSE WITHOUT EXAMINATION							No.
Grand total from origin	M. A.		M. S.		ALL OTHERS		
	During year	Total from origin	During year	Total from origin	During year	Total from origin	
218	219	221	222	224	225	227	
272	.....	1,080	.....	.....	.....	.....	1
?	10	232	.....	.....	.....	446	2
.....	17	?	.....	.....	.....	.....	3
.....	?	407	.....	.....	.....	.....	4
?	?	362	?	18	.....	.....	5
.....	10	506	.....	.....	.....	.....	6
?	.....	.....	.....	.....	.....	.....	7
?	6	312	2	19	.....	2	8
326	?	261	?	54	.....	.....	9
? 297	.....	77	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	11
.....	.....	112	.....	3	.....	.....	12
.....	.....	.....	.....	.....	.....	.....	12a
7	.....	.....	.....	.....	.....	.....	13
?	.....	.....	.....	.....	?	37	14
1	?	1	.....	.....	.....	.....	15
?	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	17
903	43	3,350	2	94	?	485	

## SCIENCE FOR WOMEN

2333	.....	16	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	2
?	.....	.....	.....	.....	.....	.....	3
?	?	13	.....	.....	.....	.....	4
?	.....	.....	.....	.....	?	95	5
?	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	7
333	?	29	.....	.....	?	95	

## SCIENCE FOR MEN AND WOMEN

	Men 219	Women 220		Men 222	Women 223		Men 225	Women 226		
4	.....	.....	31	.....	.....	17	.....	.....	.....	1
32	.....	.....	166	.....	.....	6	.....	.....	125	2
113	.....	.....	.....	.....	.....	.....	?	?	2	3
182	8	2	268	1	.....	54	1	1	36	4
331	8	2	465	1	.....	77	1	1	163	
1,567	51	2	3,844	3	.....	171	1	1	743	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

of Mines and School of Political Science.

TABLE 2—

COLLEGES OF ARTS AND

No.	IN COURSE WITHOUT EXAMINATION		HONORARY DEGREES			
	Total during year	Grand total from origin	B. A.		M. A.	
			'During year	Total from origin	'During year	Total from origin
	228	230	231	233	234	236
1	.....	1,080	.....	10	.....	148
2	10	678	2	48	3	232
3	17	?	2	31	.....	120
4	.....	407	.....	.....	6	158
5	?	380	.....	.....	.....	75
6	10	506	.....	1	3	231
7	.....	.....	.....	.....	?	36
8	8	333	.....	.....	.....	50
9	?	315	.....	.....	.....	.....
10	.....	77	.....	.....	?	2
11	.....	.....	.....	12	1	14
12	.....	115	.....	.....	4	32
12a	.....	.....	.....	.....	.....	.....
13	.....	.....	?	30	?	12
14	?	37	.....	.....	.....	.....
15	?	1	1	1	1	1
16	.....	.....	.....	?	3	?
17	.....	.....	.....	1	12	31
	45	3,929	5	134	33	1,142

## COLLEGES OF ARTS AND

1	.....	16	.....	.....	.....	16
2	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....
4	?	13	1	3	4	23
5	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....
	?	29	1	3	4	39

## COLLEGES OF ARTS AND

	Men 228	Women 229		Men 231	Women 232		Men 234	Women 235	
1	.....	.....	48	.....	.....	.....	.....	.....	11
2	.....	.....	297	.....	.....	.....	.....	.....	3
3	?	?	2	.....	.....	.....	.....	.....	.....
4	10	3	358	.....	.....	.....	.....	.....	6
	10	3	705	.....	.....	.....	.....	.....	20
	55	3	4,663	5	1	137	33	4	1,201
	.....	.....	.....	.....	.....	.....	.....	.....	.....

1 For names see summary.

(Continued)

## SCIENCE FOR MEN

HONORARY DEGREES						No.
PH. D.		D. D. OR S. T. D.		LL. D.		
'During year	Total from origin	'During year	Total from origin	'During year	Total from origin	
237	239	240	242	243	245	
.....	.....	1	172	2	297	1
.....	17	4	256	2	125	2
1	32	3	112	3	98	3
.....	.....	5	173	3	59	4
.....	28	7	178	1	64	5
1	18	.....	108	1	33	6
?	3	.....	.....	1	36	7
.....	11	.....	69	.....	36	8
.....	.....	.....	.....	.....	.....	9
.....	.....	3	24	?	1	10
.....	3	.....	.....	.....	12	11
1	5	.....	.....	.....	6	12
.....	.....	.....	.....	.....	.....	12a
.....	.....	.....	.....	.....	.....	13
.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	15
.....	?	.....	?	.....	?	16
.....	1	.....	.....	.....	.....	17
3	118	23	1,092	13	567	

## SCIENCE FOR WOMEN

.....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	1	3
1	6	.....	6	.....	3	4
.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	7
1	6	.....	6	.....	4	

## SCIENCE FOR MEN AND WOMEN

Men 237	Women 238		Men 240	Women 241		Men 243	Women 244		
.....	.....	5	2	.....	20	.....	.....	2	1
.....	.....	10	.....	.....	12	1	.....	4	2
.....	.....	.....	.....	.....	.....	?	?	2	3
.....	.....	3	3	.....	46	1	.....	14	4
.....	.....	18	5	.....	78	2	?	22	
3	1	142	28	.....	1,176	15	?	593	
.....	.....	.....	.....	.....	.....	.....	.....	.....	

2 Including 1 woman.



TABLE 2 —  
COLLEGES OF ARTS AND

No.	HONORARY DEGREES, <i>continued</i>				COLLEGE HONORS				
	ALL OTHERS		Total during year	Grand total from origin	<sup>2</sup> Appointments	<sup>1</sup> PRIZES		<sup>1</sup> SCHOLARSHIPS	
	<sup>1</sup> During year	Total from origin				No.	Value	No.	Value
	246	248	249	251	252	253	254	255	256
1	1	35	4	462	0	2	\$110	13	\$1,300
2	.....	.....	11	678	1	14	375	?	?
3	.....	16	9	409	7	45	?	2	?
4	1	5	15	395	5	12	202	?	?
5	.....	47	8	392	5	?	?	1	350
6	.....	1	5	392	9	24	475	?	?
7	?	26	1	101	6	4	150	?	?
8	.....	2	.....	168	2	6	225	1	300
9	.....	.....	.....	.....	6	46	?	?	?
10	?	11	3	38	1	13	?184	?	?
11	?	2	1	43	0	8	?400	?	?
12	.....	.....	6	43	5	7	200	?	?
12a	.....	.....	.....	.....	3	2	40	0	0
13	.....	.....	?	42	6	2	43	?	?
14	.....	.....	.....	.....	5	?	?	?	?
15	.....	.....	2	2	3	6	60	0	0
16	.....	?	3	?	5	4	800	?	?
17	.....	.....	12	33	4	5	66	3	600
	2	145	80	3,198	73	200	\$3,330	20	\$2,550

COLLEGES OF ARTS AND									
1	.....	2	.....	18	2	1	25	?	?
2	.....	.....	.....	.....	1	0	0	1	25
3	.....	.....	.....	1	0	2	230	?	?
4	1	3	7	44	3	?	?	?	?
5	.....	.....	.....	.....	0	0	0	0	0
6	.....	.....	.....	.....	7	10	380	18	4,800
7	.....	.....	.....	.....	0	0	0	0	0
	1	5	7	63	13	13	\$635	19	\$4,825

COLLEGES OF ARTS AND											
	Men 246	Women 247		Men 249	Women 250						
1	1	.....	1	3	.....	39	0	8	76	34	1,530
2	.....	.....	6	1	.....	35	0	0	0	0	0
3	.....	.....	.....	?	?	2	0	12	390	6	1,200
4	.....	.....	4	4	.....	73	0	0	0	35	1,900
	1	.....	11	8	?	149	0	20	\$466	75	\$4,630
	3	1	161	88	7	3,410	86	233	\$4,431	114	\$12,005
	.....	.....	.....	.....	.....	.....	132	308	\$8,608	131	\$18,613

1 For names see summary.      2Includes all honors conferred without money or

(Continued)

## SCIENCE FOR MEN

CONFERRED			TOTAL LECTURES AND EXERCISES OFFERED ALL CLASSES DURING YEAR						No.
FELLOWSHIPS		Total value	SCIENCE						
No.	Value		Algebra	Geometry	Conic sections	Solid geometry	Trigo- nometry	Descriptive geometry	
257	258	259	260	261	262	263	264	265	
2	\$1,000	\$2,410	55	68	?	?	75	?	1
?	?	375	?	?	?	?	?	?	2
0	0	?	60	?	?	39	48	?	3
?	?	202	70	30	.....	35	40	.....	4
2	600	950	60	?	?	60	96	?	5
?	?	475	75	.....	.....	60	40	70	6
?	?	150	220	220	220	220	220	140	7
?	?	525	95	?	?	40	50	?	8
?	?	?	32	.....	.....	70	96	128	9
?	?	?184	67	?	?	61	50	?	10
?	?	?400	? 400	? 100	? 100	100	? 100	.....	11
?	?	200	114	38	38	38	152	.....	12
0	0	40	80	? 100	?	?	120	?	12a
?	?	43	333	333	?	148	185	.....	13
?	?	?	228	342	30	100	56	50	14
0	0	60	140	140	?	60	60	?	15
?	?	800	?	?	?	?	?	?	16
?	?	666	380	340	?	?	70	?	17
4	\$1,600	\$7,480	2,409	1,711	388	1,031	1,458	388	

## SCIENCE FOR WOMEN

?	?	25	72	64	?	?	68	?	1
0	0	25	?	?	?	?	?	?	2
?	?	230	.....	.....	.....	51	?	.....	3
?	?	?	266	266	20	108	108	10	4
0	0	0	68	.....	?	68	68	?	5
?	?	5,180	1,216	1,216	912	342	437	?	6
0	0	0	71	?	12	56	?	?	7
?	?	\$5,460	1,693	1,546	944	625	681	10	

## SCIENCE FOR MEN AND WOMEN

?	?	1,606	90	50	.....	40	60	.....	1
0	0	0	180	60	60	60	60	60	2
8	3,200	4,790	938	?	?	273	660	492	3
0	0	1,900	100	.....	?	44	72	36	4
8	\$3,200	\$8,296	1,308	110	60	417	852	588	
12	\$4,800	\$21,236	5,410	3,367	1,392	2,073	2,991	986	
.....	.....	\$32,021	.....	.....	.....	.....	.....	.....	

prize, names given in summary.

3 Including L. H. D. conferred on 2 women.

TABLE 2—  
COLLEGES OF ARTS AND

No.	TOTAL LECTURES AND EXERCISES								
	SCIENCE—								
	Analytic geometry	Quaternions	Calculus	Surveying	Astronomy	Geodesy	Physics	Chemistry	Qualitative analysis
	266	267	268	269	270	271	272	273	274
1	60	?	60	15	60	.....	150	124	?
2	?	?	?	?	?	?	?	?	?
3	72	36	72	39	48	?	58	72	?
4	80	.....	100	10	72	.....	108	64	.....
5	96	48	48	?	40	?	240	120	120
6	90	20	110	10	99	.....	110	55	158
7	140	140	140	240	120	360	140	280	280
8	125	?	55	?	55	?	125	?	50
9	48	?	96	?	?	?	64	160	?
10	37	?	?	20	37	?	125	22	?
11	? 100	.....	? 100	? 30	? 30	.....	? 200	? 80	70
12	114	.....	38	.....	76	.....	114	114	38
12a	.....	?	?	27	?	?	100	.....	.....
13	185	.....	185	185	148	.....	148	148	.....
14	30	30	20	20	20	20	58	58	40
15	?	?	?	?	?	?	80	?	?
16	?	?	16	?	?	?	?	?	?
17	72	?	?	?	?	?	240	240	70
	1,149	274	1,040	596	805	380	2,060	1,537	826

COLLEGES OF ARTS AND									
1	34	?	?	?	90	?	66	64	10
2	?	?	?	?	?	?	?	?	?
3	68	51	102	? 102	231	.....	136	102	68
4	22	8	20	?	20	?	127	86	?
5	68	?	68	?	68	?	102	68	43
6	?	?	?	?	836	?	494	767	?
7	?	?	?	?	?	?	?	?	?
	192	59	190	102	1,245	?	925	1,087	121

COLLEGES OF ARTS AND									
1	54	.....	54	30	54	.....	98	90	72
2	60	.....	60	60	120	30	120	?	60
3	598	44	957	884	351	338	102	484	?
4	48	.....	96	33	122	.....	149	70	.....
	760	44	1,167	1,007	647	368	469	644	132
	2,101	377	2,397	1,705	2,697	748	3,454	3,268	1,079
	.....	.....	.....	.....	.....	.....	3,923	5,745	1,955

(Continued)

## SCIENCE FOR MEN

OFFERED ALL CLASSES DURING YEAR

(Continued)

Quantitative analysis	Mineralogy	Geology	Paleontology	Biology	Microscopy	Botany	Zoology	Other	No.
275	276	277	278	279	280	281	282	283	
?	?	30	?	?	?	60	?	136	1
?	?	?	?	?	?	?	?	?	2
?	52	48	?	?	?	?	18	244	3
.....	.....	30	.....	12	.....	15	.....	32	4
60	26	70	?	48	?	60	24	?	5
180	22	40	10	.....	.....	50	70	?	6
?	?	?	?	?	?	?	?	?	7
85	?	42	?	?	?	48	46	?	8
?	4	14	14	84	12	?	96	256	9
?	?	?	?	?	?	?	?	?	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	11
38	8	114	.....	.....	.....	.....	.....	?	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	12a
.....	.....	.....	.....	.....	.....	.....	.....	?	13
40	30	20	.....	20	25	25	25	?	14
?	?	?	?	?	?	?	?	?	15
?	?	?	?	8	?	?	?	?	16
?	?	?	?	?	?	?	?	120	17
403	142	408	24	172	37	258	279	788	

## SCIENCE FOR WOMEN

.....	.....	40	28	32	10	48	51	?	1
?	?	?	?	?	?	?	?	?	2
68	68	68	.....	68	.....	.....	68	.....	3
?	?	67	.....	?	?	144	144	?	4
?	?	85	?	?	?	68	21	?	5
?	?	?	?	?	?	684	?	152	6
?	?	?	?	?	?	? 393	?	?	7
68	68	260	28	100	10	1,337	284	152	

## SCIENCE FOR MEN AND WOMEN

10	30	50	.....	?	?	54	54	?	1
.....	120	120	120	240	240	120	120	.....	2
?	72	133	30	?	11	210	959	436	3
.....	46	76	.....	22	55	76	69	55	4
10	268	379	150	262	306	460	1,202	491	
481	478	1,047	202	534	353	2,055	1,765	1,431	
2,187	.....	.....	...	.....	722	2,228	.....	.....	



COLLEGES OF ARTS AND

No.	TOTAL LECTURES AND								
	PHILOSOPHY					SOCIAL SCIENCE			
	Psychology	Logic	Ethics	History of philosophy	Other	Political science	Economics	Pedagogy	Other
	284	285	286	287	288	289	290	291	292
1	96	64	64	96	?	?	156	64	?
2	?	?	?	?	?	?	?	?	?
3	87	36	48	48	45	54	54	?	120
4	106	18	24	15	?	12	30	.....	?
5	60	60	60	?	?	30	30	?	?
6	60	70	20	10	?	70	.....	.....	?
7	120	120	120	60	?	120	120	?	?
8	70	56	30	48	?	?	30	?	?
9	64	32	16	48	256	48	48	16	?
10	30	54	37	10	?	56	?	?	?
11	? 80	? 120	? 80	? 30	? 160	.....	.....	.....	.....
12	25	171	608	.....	?	38	38	.....	?
12a	?	170	300	?	.....	.....	.....	.....	.....
13	185	185	.....	.....	?	.....	.....	.....	.....
14	100	60	60	80	?	25	30	50	?
15	?	?	?	?	?	?	?	?	?
16	?	10	?	?	?	?	?	.....	?
17	76	40	130	?	100	?	?	?	?
	1,159	1,266	1,597	445	561	453	536	130	120

						COLLEGES OF ARTS AND			
1	72	54	17	54	?	48	?	?	?
2	?	?	?	?	?	?	?	?	?
3	84	52	51	.....	.....	51	.....	.....	?
4	30	20	25	?	?	20	.....	?	?
5	85	68	60	25	?	.....	43	.....	?
6	380	?	190	?	?	?	?	912	?
7	?	?	?	?	?	?	?	?	?
	651	194	343	79	?	119	43	912	?

COLLEGES OF ARTS AND[illegible]

(Continued)

## SCIENCE FOR MEN

## EXERCISES — (Continued)

HISTORY									No.
Philosophy of	General	Greek	Roman	Other ancient	Medieval	English	United States	Other modern	
293	294	295	296	297	298	299	300	301	
?	90	?	?	?	?	?	120	?	1
?	?	?	?	?	?	?	?	?	2
?	26	?	?	?	?	?	?	24	3
.....	30	?	?	.....	.....	90	.....	.....	4
36	?	?	?	36	?	24	?	36	5
24	.....	6	10	10	124	42	42	60	6
60	360	120	120	120	120	120	360	120	7
55	?	47	34	?	46	55	12	?	8
?	96	?	?	?	?	64	32	?	9
?	?	23	44	28	110	69	8	?	10
?	?	?	?	?	?	?	?	?	11
114	.....	49	49	49	49	49	49	49	12
?	? 400	?	?	?	?	?	?	?	12a
.....	.....	.....	.....	74	.....	.....	148	74	13
80	184	184	184	184	114	114	114	114	14
?	?	?	?	?	?	?	?	?	15
?	?	?	?	?	?	?	?	?	16
?	?	?	?	200	?	?	?	?	17
369	1,186	429	441	701	563	675	885	477	

## SCIENCE FOR WOMEN

?	?	18	18	?	18	16	?	66	1
?	?	?	?	?	?	?	?	?	2
.....	.....	25	26	?	68	51	51	.....	3
?	?	72	72	?	72	248	?	?	4
43	.....	.....	.....	.....	68	68	.....	68	5
?	?	456	304	.....	?	152	?	380	6
?	?	?	?	?	?	?	?	?	7
43	?	571	420	?	226	535	51	514	

## SCIENCE FOR MEN AND WOMEN

.....	108	54	54	.....	.....	36	.....	.....	1
60	120	60	60	.....	.....	120	120	.....	2
?	?	44	88	?	102	102	306	124	3
12	40	?	?	58	60	50	.....	95	4
72	268	158	202	58	162	308	426	219	
484	1,454	1,158	1,063	759	951	1,518	1,362	1,210	
.....	.....	.....	.....	.....	.....	.....	.....	.....	

COLLEGES OF ARTS AND

No.	TOTAL LECTURES AND								
	LANGUAGE AND								
	Comp. philology	English	Composition	Rhetoric	Elocution	English literature	Anglo-Saxon	German	French
	302	303	304	305	306	307	308	309	310
1	?	396	?	?	?	120	152	240	240
2	?	?	?	?	?	?	?	?	?
3	?	?	310	65	24	122	?	300	194
4	?	.....	81	72	36	135	....	210	150
5	?	288	80	80	80	?	?	250	228
6	.....	33	105	70	105	200	78	408	141
7	?	600	600	600	120	360	60	240	240
8	10	130	?	50	60	30	?	176	176
9	?	16	?	64	?	128	?	512	352
10	?	92	20	29	110	61	?	?	63
11	.....	?200	?200	?200	?40	?200	.....	?90	?90
12	.....	171	171	76	152	38	38	76	76
12a	?	?	?180	80	120	?40	?	?	?
13	.....	296	72	370	72	148	?	296	296
14	360	316	316	570	114	228	0	228	152
15	?	600	?	?	?	?	?	360	?
16	?	?	?	?	?	?	?	?	?
17	?	?	110	230	160	230	?	?	240
	370	3,138	2,245	2,556	1,193	2,040	328	3,386	2,638

						COLLEGES OF ARTS AND			
1	?	?	?	120	100	34	?	2306	2306
2	?	?	?	?	?	?	?	?	?
3	17	?	20	68	68	170	85	459	459
4	?	?	18	108	30	108	?	288	432
5	.....	.....	140	85	.....	251	.....	255	255
6	?	.....	114	?	?	936	?	1,520	3,002
7	.....	99	?	?	.....	?	.....	57	57
	17	99	178	495	198	1,499	85	2,885	4,511

[illegible]

(Continued)

## SCIENCE FOR MEN

## EXERCISES — (Continued)

## LITERATURE

Italian	Spanish	Latin	Greek	Sanskrit	Hebrew	Other	Bibliography	Law	No.
311	312	313	314	315	316	317	318	319	
60	120	369	369	60	180	?	?	.....	1
?	?	?	?	?	?	?	?	?	2
?	?	?	?	?	84	74	?	?	3
.....	.....	318	372	.....	.....	?	.....	.....	4
?	60	312	336	?	36	?	?	120	5
.....	.....	288	356	.....	.....	?	.....	66	6
?	?	240	600	600	?	?	8	540	7
?	?	275	198	45	?	?	?	55	8
?	480	512	384	?	?	?	?	96	9
?	?	340	471	?	36	?	?	?	10
.....	.....	?	?	.....	.....	?	.....	.....	11
.....	.....	760	608	.....	?	?	.....	.....	12
?	?	600	300	?	?	?	?	.....	12a
.....	.....	740	592	.....	.....	?	?	.....	13
70	.....	570	228	.....	.....	?	?	.....	14
?	?	800	560	?	?	40	?	?	15
?	?	?	?	?	?	?	?	?	16
?	?	760	740	?	?	?	?	?	17
130	660	7,392	6,673	705	336	114	8	877	

## SCIENCE FOR WOMEN

?	?	?	?	?	?	102	?	?	1
?	?	?	?	?	?	?	?	?	2
.....	.....	425	459	.....	.....	?	?	?	3
?	?	432	72	?	?	?	?	?	4
.....	.....	310	43	.....	.....	?	.....	.....	5
?	?	3,876	532	?	?	?	?	?	6
.....	.....	113	113	.....	.....	.....	.....	.....	7
?	?	5,462	1,525	?	?	102	?	?	

## SCIENCE FOR MEN AND WOMEN

.....	.....	754	324	.....	.....	?	.....	137	1
.....	.....	560	360	.....	.....	.....	.....	120	2
136	68	680	654	102	.....	102	21	1,007	3
51	.....	280	277	.....	.....	65	.....	97	4
187	68	2,274	1,615	102	.....	167	21	1,361	
317	728	15,128	9,813	807	336	383	29	2,238	
.....	.....	.....	10,982	.....	811	1,387	.....	6,057	



TABLE 2—  
COLLEGES OF ARTS AND

No.	TOTAL LECTURES AND								
	Physi- ology and hygiene	Other medi- cine	Chris- tian evi- dences	Bible	Other theology	Engi- neering	FINE ART—		
							Archite- cture	Sculpture	Draw- ing
	320	321	322	323	324	325	326	327	328
1	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	?	?	?	?	?	?	?	?	?
3	?	?	?	24	?	?	?	?	?
4	.....	.....	.....	.....	.....	.....	3	1	.....
5	?	?	?	?	?	600	.....	.....	60
6	192	.....	20	.....	.....	272	.....	.....	.....
7	?	?	240	240	360	60	?	?	240
8	67	12	?	25	?	?	?	?	?
9	?	?	?	?	?	?	?	?	96
10	?	?	?	37	?	?	?	?	?
11	.....	.....	160	.....	?	.....	.....	.....	290
12	129	.....	408	.....	840	.....	.....	.....	.....
12a	.....	.....	200	.....	220	.....	.....	.....	.....
13	148	?	.....	.....	518	.....	.....	.....	.....
14	.....	.....	456	152	1,184	.....	.....	.....	.....
15	?	?	?	?	?	?	?	?	?
16	?	?	?	?	?	.....	?	?	?
17	?	?	?	?	?	?	?	?	?
	536	12	1,484	478	3,122	932	3	1	486

## COLLEGES OF ARTS AND

1	18	?	48	136	?	?	21	?	21
2	?	?	?	?	?	?	?	?	?
3	93	?	?	34	?	?	?	?	?
4	72	?	10	?	?	?	10	10	72
5	40	?	25	140	?	.....	?	?	43
6	722	323	?	?	?	?	?	?	2,176
7	.....	.....	.....	.....	.....	.....	.....	.....	.....
	945	323	83	310	?	?	31	10	2,312

## COLLEGES OF ARTS AND

1	72	?	54	.....	?	.....	.....	.....	.....
2	180	240	60	60	150	300	180	30	120
3	310	338	?	?	?	413	2362	?	2,720
4	40	?	55	?	?	?	823	?	568
	602	578	169	60	150	713	1,365	30	3,408
	2,083	913	1,736	848	3,272	1,645	1,399	41	6,206
	3,909	28,722	2,050	1,161	6,836	.....	.....	.....	.....

(Continued)

## SCIENCE FOR MEN

EXERCISES — (Continued)						VALUE OF BUILDINGS		No.
(Continued)						Main	Church or chapel	
Painting	Vocal music	Instru- mental music	History of art	Art criticism	Other			
329	330	331	332	333	334	335	336	
.....	.....	.....	.....	.....	.....	.....	25,000	1
?	?	?	?	?	?	?	110,000	2
?	?	?	?	?	?	?	?	3
1	1	1	1	.....	?	.....	14,000	4
.....	.....	.....	.....	.....	.....	200,000	.....	5
.....	.....	.....	35	.....	?	.....	.....	6
?	240	240	?	?	?	11,000	10,000	7
?	?	?	?	?	?	40,000	.....	8
?	?	?	?	32	?	100,000	.....	9
?	?	?	?	?	?	.....	34,000	10
.....	.....	.....	.....	.....	?	260,000	?	11
.....	754	754	.....	.....	?	100,000	?	12
.....	240	.....	.....	.....	.....	80,000	.....	12a
.....	.....	.....	.....	.....	.....	80,000	?	13
.....	280	1,528	36	60	?	136,000	?	14
?	?	?	?	?	?	21,000	.....	15
?	?	?	?	?	?	208,760	.....	16
?	?	?	?	?	?	40,000	.....	17
1	1,515	2,523	72	92	?	1,076,760	173,000	

## SCIENCE FOR WOMEN

22	21,500	1,850	?	?	?	100,000	.....	1
?	?	?	?	?	?	20,000	.....	2
?	2238	?	68	?	?	328,415	.....	3
20	35	?	?	30	?	85,000	.....	4
140	280	280	290	238	?	125,000	.....	5
?	951	?	?	?	323	500,000	.....	6
.....	.....	.....	.....	.....	.....	232,500	.....	7
182	3,004	2,130	158	68	323	1,190,915	.....	

## SCIENCE FOR MEN AND WOMEN

.....	.....	.....	.....	.....	.....	240,000	.....	1
240	240	120	120	90	.....	25,000	20,000	2
?	?	?	?	?	?	70,111	41,547	3
601	491	541	219	11	365	150,000	.....	4
841	731	661	339	101	365	285,111	61,547	
1,024	5,250	5,314	569	261	688	2,552,786	234,547	
.....	.....	.....	.....	.....	.....	3,960,321	.....	

TABLE 2—  
COLLEGES OF ARTS AND

No.	VALUE OF						
	Dormitory	Class room building	Science	Art	Library	Laboratory	Museum
	<b>337</b>	<b>338</b>	<b>339</b>	<b>340</b>	<b>341</b>	<b>342</b>	<b>343</b>
1	.....	?200,000	?175,000	.....	?400,000	.....	?180,000
2	.....?	.....?	.....?	.....?	41,000	.....?	.....?
3	.....?	.....?	.....?	.....?	.....?	.....?	.....?
4	24,000	.....	9,000	.....	25,000	.....	.....
5	.....	.....	.....	.....	.....	.....	.....
6	24,500	30,000	.....	.....	145,000	25,000	.....
7	.....	.....	40,000	.....	.....	.....	.....
8	.....	.....	.....	.....	100,000	30,000	.....
9	.....	.....	.....	.....	.....	.....	.....
10	50,417	.....	.....	.....	5,000	.....	.....
11	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....
12a	.....	.....	.....	.....	.....	.....	.....
13	.....	45,000	.....	.....?	.....?	.....?	.....?
14	.....?	25,000	.....?	.....?	.....?	.....?	.....?
15	.....	45,000	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....
17	.....	28,000	.....	.....	.....	.....	.....
	98,917	373,000	224,000	.....?	716,000	55,000	180,000

COLLEGES OF ARTS AND

1	.....	.....	.....	.....	.....	.....	.....
2	15,000	.....	.....	20,000	.....	.....	.....
3	.....	.....	.....	.....	.....	13,816	73,151
4	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	20,000	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....
	15,000	.....	20,000	20,000	.....	13,816	73,151

COLLEGES OF ARTS AND

1	.....	20,000	.....	.....	15,000	.....	.....
2	.....	4,000	.....	.....	.....	.....	30,000
3	202,010	80,485	72,603	60,313	120,000	100,923	.....?
4	.....	.....	.....	.....	40,000	.....	.....
	202,010	104,485	72,603	60,313	175,000	100,923	30,000
	315,927	477,485	316,603	80,313	891,000	169,739	283,151
	.....	.....	.....	.....	.....	.....	.....

(Continued)

## SCIENCE FOR MEN

BUILDINGS—(Continued)						CLASS ROOMS IN ALL BUILDINGS		No.
Observa- tory	Gymna- sium	Presi- dent's house	OTHER		Total	No.	No. of seats	
			No.	Value				
344	345	346	347	348	349	350	351	
220,000	.....	215,000	1	25,000	21,000,000	?	?	1
?	6,500	10,000	1	242,500	410,000	?	?	2
?	?	?	?	?	2210,000	10	500	3
1,500	10,000	8,000	7	16,500	108,000	7	176	4
.....	.....	.....	.....	.....	2200,000	216	2600	5
.....	.....	12,000	.....	.....	236,500	13	520	6
.....	.....	.....	23	140,000	201,000	236	900	7
600	.....	25,000	.....	.....	195,600	17	?	8
.....	.....	.....	.....	.....	2100,000	?	2,400	9
2250	1,000	54,000	5	26,150	150,817	6	120	10
.....	.....	.....	3	2140,000	2200,000	14	2500	11
.....	.....	.....	.....	.....	2100,000	13	735	12
.....	.....	.....	.....	.....	80,000	9	264	12a
.....	.....	.....	?	?	2125,000	14	?	13
?	?	.....	?	?	179,000	16	700	14
.....	.....	34,000	2	23,500	103,500	?	800	15
.....	?	.....	.....	.....	208,760	29	?	16
.....	.....	?	2	24,000	92,000	30	450	17
22,350	17,500	158,000	24	577,650	3,900,177	210	8,665	

## SCIENCE FOR WOMEN

4,080	.....	5,000	.....	.....	109,080	210	2400	1
.....	.....	5,000	.....	.....	60,000	7	?	2
6,040	26,000	?	4	59,694	507,127	217	2645	3
.....	.....	.....	.....	.....	85,000	8	2180	4
.....	.....	10,000	2	7,000	162,000	21	2100	5
.....	.....	.....	?	?	2500,000	52	24,600	6
.....	.....	.....	.....	.....	232,500	3	32	7
10,120	26,000	20,000	6	66,694	1,455,707	118	5,957	

## SCIENCE FOR MEN AND WOMEN

.....	.....	5,000	?	?	280,000	11	340	1
1,000	.....	.....	.....	.....	80,000	19	950	2
?	32,700	50,000	?	104,176	934,871	?	?	3
12,000	.....	.....	1	2400,000	2602,000	59	700	4
13,000	32,700	55,000	1	504,176	1,696,871	89	1,990	
45,470	76,200	233,000	31	1,148,520	7,052,755	417	16,612	
.....	.....	.....	.....	.....	9,841,790	570	27,332	



TABLE 2—  
COLLEGES OF ARTS AND

No.	APPARATUS									
	MATHEMATICAL		ASTRONOMIC		PHYSICAL		CHEMICAL		BIOLOGIC	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	352	353	354	355	356	357	358	359	360	361
1	?	?	?	?	?	?	?	?	?	?
2	?	5,000	?	?	?	15,000	?	5,000	?	?
3	?	?	?	20,000	?	5,000	?	5,000	?	?
4	?	400	?	2,700	?	2,800	?	2,000	.....	.....
5	.....	.....	?	23,000	?	27,000	?	210,000	.....	.....
6	?	400	?	1,050	?	5,000	?	3,000	?	600
7	?	100	?	500	?	1,000	?	500	.....	.....
8	?	150	?	1,400	?	800	?	2,500	?	500
9	?	12,000	?	10,000	2,300	20,000	200	5,000	?	3,100
10	?	?	?	3,500	?	500	?	2250	.....	.....
11	?	2300	?	2350	?	3,000	?	2900	.....	.....
12	25	100	25	100	50	500	50	500	.....	.....
12a	.....	.....	?	100	?	150	?	150	.....	.....
13	.....	.....	.....	.....	?	500	.....	.....	.....	.....
14	?	2100	?	2100	?	2550	?	2250	?	2100
15	?	?	?	?	?	3,500	?	500	?	?
16	?	?	?	?	?	?	?	?	?	?
17	?	100	?	?	?	1,000	?	600	?	?
	25	18,550	25	42,800	2,350	66,300	250	36,150	?	4,300

COLLEGES OF ARTS AND

1	36	100	18	3,258	225	1,786	850	448	16	207
2	?	200	?	250	?	375	?	400	?	150
3	?	500	?	8,308	?	6,811	?	3,681	?	1,258
4	220	275	.....	.....	2100	2400	2300	2150	220	2150
5	.....	.....	?	400	?	1,750	?	300	?	300
6	?	150	?	150	?	3,000	?	2,000	?	1,000
7	?	100	.....	.....	.....	.....	?	?	.....	.....
	56	1,125	18	12,366	325	14,122	1,150	6,979	36	3,065

COLLEGES OF ARTS AND

1	?	10	?	215	?	250	?	275	?	2350
2	?	500	?	3,500	?	1,160	?	840	?	500
3	.....	.....	.....	.....	?	42,801	?	17,226	.....	.....
4	?	700	?	8,000	?	8,000	?	1,000	37	700
	?	1,210	?	11,515	?	52,011	?	19,141	37	1,550
	81	20,885	43	66,681	2,675	132,433	1,400	62,270	73	8,915
	.....	.....	.....	.....	.....	151,500	.....	93,799	.....	26,081

(Continued)

## SCIENCE FOR MEN

APPARATUS						LIBRARY		No.
GYMNASTIC		MUSICAL		OTHER	Total value	VOLUMES		
No.	Value	No.	Value	Value		Bought	Added by gift	
363	363	364	365	366	367	368	369	
P	P	P	P	P	100,000	10,792	3,333	1
P	P	P	P	P	P25,000	272	475	2
P	P	P	P	P	P30,000	P	654	3
P	1,000	P	2,000	.....	10,900	645	606	4
.....	.....	.....	.....	.....	P20,000	.....	327	5
.....	.....	.....	.....	.....	10,050	P	?	6
P	50	P	1,250	.....	3,400	50	3	7
.....	.....	.....	.....	.....	5,350	300	610	8
.....	.....	.....	.....	.....	50,100	506	79	9
.....	.....	.....	.....	.....	4,250	.....	2,135	10
P	P200	.....	.....	.....	4,750	P200	20	11
10	50	40	1,000	.....	2,250	.....	.....	12
P	50	?	600	.....	1,050	40	.....	12a
.....	.....	.....	.....	.....	500	P	450	13
P	P200	P	P800	.....	P2,100	150	39	14
.....	.....	P	1,750	.....	5,750	P	P	15
P	P	P	?	P	P4,000	.....	.....	16
P	200	P	1,000	.....	2,900	20	.....	17
10	1,750	40	8,400	P	282,350	12,975	8,731	

## SCIENCE FOR WOMEN

P100	25	P	5,000	.....	10,825	41	98	1
P	150	P	2,680	.....	4,205	15	.....	2
P	1,250	P	17,700	.....	39,509	455	108	3
.....	.....	2	1,500	.....	P2,275	.....	P10	4
P	600	12	4,000	.....	7,350	P100	P400	5
P	200	P	500	.....	7,500	P	P	6
.....	.....	.....	.....	P	P1,900	P	P	7
100	2,225	14	31,380	P	73,564	611	616	

## SCIENCE FOR MEN AND WOMEN

P	P25	P	P400	.....	P925	.....	120	1
.....	.....	P	2,000	.....	8,500	417	259	2
P	3,604	.....	.....	186,135	249,967	3,612	1,200	3
.....	.....	14	20,000	.....	38,400	38	6,015	4
P	3,629	14	22,400	186,135	279,792	4,067	7,594	
110	7,604	68	62,180	186,135	653,706	17,653	16,941	
.....	.....	.....	.....	.....	762,648	19,538	24,487	

1 Includes \$50,697 for horses, cattle and other articles not usually counted as apparatus.

TABLE 2—  
COLLEGES OF ARTS AND

No.	LIBRARY						
	PAMPHLETS		Total additions	Total volumes now owned	Total pamphlets now owned	Volumes and pamphlets deposited for use, not owned	Total volumes and pamphlets in library
	Bought	Added by gift					
	370	371	372	373	374	375	376
1	.....	.....	14,125	109,200	?	? 6,500	? 115,700
2	145	.....	892	26,911	?	?	? 26,911
3	?	?	?654	? 35,000	?	.....	35,000
4	.....	643	1,894	22,616	2,128	1,354	26,098
5	.....	.....	327	? 12,000	.....	.....	? 12,000
6	?	?	391	19,045	?	.....	?
7	30	.....	83	30,000	5,000	.....	35,000
8	?	?	?	25,610	?	?	? 25,610
9	.....	?49	634	25,874	179	.....	26,053
10	?	?	?	8,001	?	.....	?
11	.....	?50	?270	? 10,000	? 200	.....	10,200
12	20	.....	20	7,518	256	.....	7,774
12a	.....	10	50	4,040	150	.....	4,190
13	?	?	?	? 4,306	? 506	.....	4,812
14	57	.....	246	6,272	497	.....	6,769
15	?	?	?	?	?	?	14,000
16	.....	.....	.....	6,000	.....	.....	6,000
17	?	?100	120	4,000	1,000	.....	5,000
	252	852	19,706	356,393	9,916	7,854	361,117

COLLEGES OF ARTS AND

1	.....	.....	139	? 2,789	.....	.....	2,789
2	36	.....	51	2,000	1,500	.....	3,500
3	.....	?116	679	17,000	500	.....	17,500
4	.....	.....	?10	? 10,000	?	? 300	? 1,300
5	.....	.....	?500	? 3,000	.....	.....	? 3,000
6	?	?	?	?	?	?	?
7	.....	.....	74	74	.....	.....	74
	36	116	1,453	25,863	2,000	300	28,163

COLLEGES OF ARTS AND

1	?	?	?120	9,748	? 5,000	898	15,646
2	.....	?250	926	7,713	2,200	.....	9,913
3	.....	650	5,462	108,138	30,000	728	138,866
4	?	?2,818	8,871	37,888	4,086	.....	41,974
	?	3,718	15,379	163,487	41,286	1,626	206,399
	288	4,686	36,538	545,743	53,202	9,780	595,679
	575	6,512	48,082	679,514	139,205	.....	802,803

1 Where institutions did not state whether pamphlets were bought or given they have been put under only, always open. 4 Saturdays only. 5 Library closed, reading room open. 6 To officers of

(Continued)

## SCIENCE FOR MEN

LIBRARY										No.
SERIALS			NO. OF HOURS OPEN DAILY				No. of readers at library	Volumes lent for home use	Amount of library funds	
Bought in past year	Given in past year	Total received	In term time	In vacation	On holidays	On Sundays				
377	378	379	380	381	382	383	384	385	386	
?	?	?	13.5	13.5	13.5	....	46,033	16,004	0	1
42	....	42	6.5	....	0	....	?	?	?	2
?	?	?	6.0	....	0	....	?	1,144	?	3
55	29	84	3.0	?	?	5....	?	1,976	9,514	4
? 40	....	? 40	6.0	....	0	....	?	0	2,500	5
? 31	?	31	2.5	....	0	....	?	0	25,000	6
35	....	35	8.0	....	8.0	8.0	? 300	0	0	7
85	30	115	5.0	4.5	0	....	?	?	50,000	8
162	....	162	9.0	9.0	0	....	?	?	35,000	9
5	1	6	4.0	....	4.0	....	86	0	0	10
? 25	? 5	? 30	1.0	41.0	0	....	300	1,500	0	11
26	....	26	6.0	....	0	1.0	200	0	0	12
18	....	18	5.7	....	0	....	70	0	0	12a
12	....	12	3 ?	3 ?	3 ?	3 ?	3 ?	?	?	13
....	....	....	2.0	2.0	2.0	2.0	? 100	0	0	14
?	?	?	?	?	?	?	?	?	?	15
?	?	?	?	?	?	?	?	?	0	16
....	....	....	2.0	2.0	2.0	2.0	150	0	0	17
536	65	601	....	....	....	....	47,239	20,624	122,014	

## SCIENCE FOR WOMEN

15	? 10	? 25	12.0	....	0	....	? 150	0	0	1
3	2	5	2.0	....	0	....	?	100	0	2
78	30	108	11.7	....	6.0	3.0	350	0	25,000	3
....	....	....	?	?	?	?	?	0	0	4
....	....	....	?	....	?	?	?	0	0	5
?	?	?	?	?	?	?	?	?	?	6
....	3	3	?	?	?	?	?	?	0	7
96	45	141	....	....	....	....	500	100	25,000	

## SCIENCE FOR MEN AND WOMEN

....	25	25	2.0	....	0	....	? 115	? 1,200	997	1
?	?	?	6.5	?	0	....	?	4,400	0	2
470	50	520	13.5	8.0	? 8.0	....	?	65,089	0	3
35	222	257	8.0	8.0	8.0	....	200	0	7100,000	4
505	297	802	....	....	....	....	315	10,689	100,997	
1,137	407	1,544	....	....	....	....	48,054	31,413	248,011	
1,314	571	1,850	....	....	....	....	48,134	35,721	332,525	

"added by gift." 2 Bound volumes; pamphlets not catalogued. 3 Library for the professors  
 University only; reference library for students. ? Not available till death of donor.



TABLE 2—  
COLLEGES OF ARTS AND

No.	LIBRARY					
	Annual income of funds	Gifts of money during year	PAID FOR			
			Books and pamphlets	Serials	Binding and repairs	Library salaries
	387	388	389	390	391	392
1	0	1,575	17,174 22	2,891 76	3,109 48	15,778 31
2	?	200	346 05	219 19	50 92	750 00
3	?	125	?	?	?	?
4	423	5,450	916 28	211 90	14 00	1,105 00
5	0	.....	.....	150 00	.....	? 500 00
6	1,150	.....	672 64	116 28	46 29	140 00
7	0	.....	310 00	120 00	40 00	.....
8	?	.....	638 58	191 04	175 60	700 00
9	1,400	?	900 00	551 00	265 70	?
10	0	50	.....	14 00	.....	25 00
11	0	.....	? 205 00	? 80 00	? 15 00	.....
12	0	.....	75 00	20 00	25 00	.....
12a	0	.....	50 00	12 00	.....	.....
13	?	?	?	? 51 00	.....	.....
14	0	.....	? 300 00	.....	? 100 00	.....
15	?	?	?	?	?	?
16	0	.....	.....	.....	.....	.....
17	0	.....	100 00	.....	.....	.....
	2,973	7,400	21,687 77	4,628 17	3,841 99	18,998 31

COLLEGES OF ARTS AND						
1	0	.....	60 00	40 00	10 00	.....
2	0	60	.....	10 00	.....	.....
3	1,500	.....	1,139 28	206 70	190 10	.....
4	0	.....	.....	.....	.....	.....
5	0	? 250	? 250 00	.....	? 60 00	.....
6	P	P	?	?	?	?
7	0	80	200 00	.....	.....	.....
	1,500	390	1,649 28	256 70	260 10	?

COLLEGES OF ARTS AND						
1	54	97	.....	.....	.....	100 00
2	0	?	982 44	.....	.....	125 00
3	0	17,852	6,000 00	2,300 00	1,000 00	7,802 00
4	0	50,000	21 50	152 15	311 60	1,749 02
	54	67,949	7,003 94	2,452 15	1,311 60	9,776 02
	4,527	75,739	30,340 99	7,337 02	5,413 69	28,774 33
	9,422	81,749	34,658 31	7,809 23	5,632 04	31,353 83

(Continued)

## SCIENCE FOR MEN

LIBRARY				MUSEUM COLLECTIONS		No.
PAID FOR		Estimated value of gifts	Present total value	CHEMISTRY		
All other expenses	Total expenditures			No. of specimens	Estimated value	
393	394	395	396	397	398	
1,300 00	40,253 77	5,135	? 277,000	?	?	1
103 58	1,479 74	?	? 30,616	?	3,000	2
?	?	?	75,000	?	?	3
150 00	2,397 18	959	? 35,000	?	250	4
.....	650 00	421	20,571	.....	.....	5
54 53	1,029 74	?	37,602	200	250	6
.....	470 00	6	58,976	?	1,000	7
.....	1,705 22	317	46,478	?	?	8
.....	1,716 70	158	60,874	1,000	2,000	9
?	? 39 00	? 3,000	? 12,000	.....	.....	10
?	? 300 00	?	? 20,000	.....	.....	11
.....	120 00	.....	18,255	.....	.....	12
.....	62 00	?	3,400	.....	.....	12a
?	?	?	? 6,075	.....	.....	13
.....	? 400 00	500	? 15,000	.....	.....	14
?	?	?	? 12,000	.....	.....	15
.....	.....	.....	? 10,000	.....	.....	16
.....	100 00	?	? 10,000	.....	.....	17
1,608 11	50,723 35	10,496	748,847	1,200	6,500	

## SCIENCE FOR WOMEN

.....	110 00	220	5,330	?	?	1
.....	10 00	?	4,550	.....	.....	2
.....	1,536 08	?	21,288	.....	.....	3
.....	.....	?	? 1,000	.....	.....	4
.....	? 310 00	250	3,560	.....	.....	5
?	?	?	?	?	?	6
.....	200 00	100	300	.....	.....	7
?	2,166 08	570	36,028	?	?	

## SCIENCE FOR MEN AND WOMEN

.....	100 00	? 200	? 12,906	?	20	1
.....	1,107 44	258	? 11,500	.....	.....	2
750 00	17,852 00	1,265	154,793	.....	.....	3
57 78	2,292 05	1,700	76,385	.....	.....	4
807 78	21,351 49	3,423	255,584	?	20	
2,415 89	74,240 92	14,489	1,040,459	1,200	6,520	
2,968 94	82,080 25	15,731	1,134,311	.....	.....	









(Continued)

## SCIENCE FOR MEN

TOTAL		SUMMARY OF PROPERTY				No.
		USED BY COLLEGE				
		GROUNDS		Buildings	Furniture	
No. of specimens	Estimated value	Acres	Value			
422	423	424	425	426	427	
?	208,328	22.0	500,000	1,000,000	50,000	1
?	25,000	2120.0	100,000	410,000	?	2
40,450	?	15.0	25,000	2210,000	?	3
?	7,915	10.0	25,000	108,000	3,000	4
?	5,500	2.4	300,000	2200,000	210,000	5
11,955	18,525	60.0	21,000	236,500	5,000	6
?	3,500	80.0	103,225	201,000	4,000	7
236,200	50,000	27.5	2210,000	2195,600	26,000	8
7,622	14,666	1?	425,000	100,000	0	9
.....	.....	235.2	11,420	150,817	7,980	10
12,500	3,100	?	2300,000	2200,000	10,000	11
2,076	5,000	2.0	280,000	100,000	10,000	12
.....	.....	?	95,000	80,000	7,000	12a
.....	.....	23.5	150,000	125,000	2915	13
606	22,600	200.0	32,500	179,000	11,000	14
?	750	?	120,000	103,500	50,000	15
.....	.....	289.0	24,000	208,760	?	16
.....	.....	30.4	60,500	92,000	9,500	17
111,409	344,884	875.0	2,762,645	3,901,177	184,395	

## SCIENCE FOR WOMEN

3,392	28,092	12.0	50,000	109,080	10,000	1
2,800	24,000	7.0	10,000	60,000	15,000	2
?	66,363	210.0	51,500	507,127	67,122	3
?	21,225	?	?	85,000	22,500	4
?	3,400	236.0	10,000	162,000	35,000	5
?	?	1.8	600,000	500,000	50,000	6
?	250	.....	.....	232,500	1,000	7
6,192	103,130	266.8	721,500	1,455,707	180,622	

## SCIENCE FOR MEN AND WOMEN

?	21,745	26.5	20,000	280,000	21,000	1
?	13,200	12.0	20,000	80,000	10,000	2
?	110,764	270.0	99,093	934,871	15,923	3
?	43,500	50.0	200,000	602,000	50,000	4
?	169,209	358.5	339,093	1,696,871	76,923	
117,601	617,223	1,500.3	3,823,238	7,052,755	441,940	
.....	685,678	1,590.2	5,287,238	9,841,790	535,551	

TABLE 2—

COLLEGES OF ARTS AND

No.	SUMMARY OF				
	USED BY COLLEGE				Real estate owned but not used by college
	Apparatus	Library	Museum	Total	
	428	429	430	431	432
1	100,000	277,000	208,328	2,135,328	8,000,000
2	25,000	30,616	25,000	2590,616	687,123
3	230,000	275,000	?	2320,000	?
4	10,900	35,000	7,915	189,815	.....
5	220,000	20,571	5,500	556,071	.....
6	10,050	37,602	18,525	328,677	3,000
7	3,400	58,976	3,500	374,101	8,100
8	25,350	246,478	250,000	513,428	17,064
9	50,100	60,874	14,666	650,640	?
10	4,250	12,000	.....	186,467	.....
11	4,750	220,000	23,100	537,850	75,000
12	2,250	18,255	5,000	415,505	.....
12a	1,050	3,400	.....	186,450	1,000
13	2500	26,075	.....	2132,490	.....
14	2,100	15,000	2,600	242,200	.....
15	5,750	12,000	750	292,000	37,000
16	4,000	10,000	?	246,760	?
17	2,900	10,000	.....	174,900	.....
	282,350	748,847	344,884	8,073,298	8,828,287

COLLEGES OF ARTS AND

1	10,825	5,330	8,092	193,327	.....
2	4,205	4,550	24,000	117,755	.....
3	39,509	21,288	66,363	752,910	.....
4	22,275	21,000	21,225	292,000	.....
5	7,350	3,560	3,400	221,310	.....
6	7,500	?	?	1,157,500	?
7	1,900	300	50	235,750	.....
	73,564	36,028	103,130	2,570,552	?

COLLEGES OF ARTS AND

1	2925	212,906	1,745	2116,576	22,000
2	8,500	11,500	13,200	143,200	.....
3	1249,967	154,793	110,764	1,565,412	.....
4	38,400	76,385	43,500	1,010,285	207,000
	297,792	255,584	169,209	2,835,473	209,000
	653,706	1,040,459	617,223	13,479,323	9,037,287
	762,648	1,134,311	685,678	17,994,318	9,877,855

1 Includes \$50,697 for horses, cattle and other

(Continued)

## SCIENCE FOR MEN

## PROPERTY—(Continued)

INVESTMENTS OWNED BY COLLEGE					No.
Real estate mortgages	Government securities	Corporation bonds and stocks	Notes and accounts payable to college	Cash on hand or in bank	
433	434	435	436	437	
23,000	.....	.....	.....	109,680	1
159,486	5,000	52,800	7,491	36,610	2
?	?	?	?	?	3
229,694	.....	.....	.....	1,926	4
25,000	248,450	.....	108,000	2,779	5
244,300	.....	251,000	3,351	3,253	6
1,300	.....	.....	8,262	4,271	7
79,885	13,850	345,250	32,302	3,120	8
?	?	?	?	?	9
52,970	.....	17,250	16,900	5,920	10
15,000	.....	.....	22,623	2300	11
.....	.....	.....	13,492	625	12
.....	.....	.....	876	1,572	12a
30,000	.....	.....	2,220	.....	13
.....	.....	.....	3,000	8,000	14
?	?	?	23,000	?	15
?	?	?	?	?	16
.....	.....	.....	20,000	1,000	17
840,635	267,300	666,300	221,517	179,056	

## SCIENCE FOR WOMEN

93,400	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	2
186,321	.....	388,000	.....	.....	3
.....	.....	.....	.....	5	4
? 15,000	.....	185,000	2,787	.....	5
?	?	?	?	?	6
.....	.....	.....	.....	898	7
294,721	?	573,000	2,787	903	

## SCIENCE FOR MEN AND WOMEN

95,489	.....	28,000	20,456	8,145	1
127,102	.....	12,000	25,400	1,046	2
880,196	.....	2,716,000	473,402	17,397	3
269,162	.....	24,000	167,420	15,866	4
1,371,949	.....	2,780,000	686,678	42,454	
2,507,305	267,300	4,019,300	910,982	222,413	
4,167,620	301,650	4,629,000	966,734	269,481	

articles not usually counted as apparatus.



TABLE 2 —  
COLLEGES OF ARTS AND

No.	SUMMARY OF PROPERTY				
	INVESTMENTS OWNED BY COLLEGE—(Continued)		Total college property	Debts at end of year	Net property
	Other property	Total			
	<b>438</b>	<b>439</b>	<b>440</b>	<b>441</b>	<b>442</b>
1	.....	8,132,680	10,268,008	1,240	10,266,768
2	13,331	961,843	1,552,459	310,000	1,242,459
3	?	?	648,272	34,000	614,272
4	58,333	289,954	479,769	.....	479,769
5	.....	364,229	920,300	.....	920,300
6	35,000	539,904	868,581	.....	868,581
7	?	21,933	396,034	113,278	282,756
8	?	491,473	1,004,901	3,477	1,000,424
9	?	?	690,390	.....	690,390
10	.....	93,040	279,508	53,078	226,429
11	?	92,923	630,773	349,272	281,501
12	.....	14,117	429,622	.....	429,622
12a	.....	3,448	189,898	39,500	150,398
13	.....	32,320	164,810	?	?164,810
14	.....	11,000	253,200	.....	253,200
15	.....	40,000	332,000	60,000	272,000
16	?	?800	?247,560	60,000	?187,560
17	.....	21,000	195,900	75,100	120,800
	106,664	11,110,664	19,551,985	1,098,945	18,452,039

				COLLEGES OF ARTS AND	
1	.....	93,400	286,727	58,000	228,727
2	.....	.....	117,755	24,000	93,755
3	.....	574,321	1,327,232	13,211	1,314,021
4	.....	5	292,005	74,000	218,005
5	?	202,787	424,097	7,487	416,610
6	?	?	21,157,500	?	21,157,500
7	.....	898	236,648	.....	236,648
	?	871,411	3,441,964	176,698	3,265,266

COLLEGES OF ARTS AND					
1	.....	154,091	271,665	7,412	264,253
2	.....	165,549	308,749	17,777	290,972
3	767,691	4,854,688	6,420,100	.....	6,420,100
4	15,000	698,499	1,708,734	77,600	1,631,134
	782,691	5,872,827	8,709,248	102,789	8,606,459
	889,355	17,854,902	31,703,197	1,378,432	30,323,764
	945,661,	20,483,964	39,045,604	1,729,082	37,113,801

(Continued)

## SCIENCE FOR MEN

FINANCIAL STATEMENT					No.
RECEIPTS DURING YEAR					
Tuition fees	Fees for professors	Room rent	Board	Other receipts from students	
443	444	445	446	447	
131,121 25	.....	.....	.....	13,788 35	1
2,242 80	.....	1,200 00	.....	223 76	2
8,526 00	.....	.....	.....	1,019 00	3
3,458 75	.....	2,000 00	.....	.....	4
.....	25,000 00	.....	.....	2,000 00	5
6,172 25	.....	510 00	.....	.....	6
14,700 00	.....	.....	50,400 00	935 00	7
12,911 24	.....	.....	.....	571 50	8
.....	.....	.....	.....	.....	9
.....	.....	250 00	99 75	14,583 31	10
21,400 00	.....	.....	2400 00	2,929 39	11
17,490 00	.....	13,520 00	20,930 00	3,130 00	12
5,840 00	.....	1,092 00	4,062 00	.....	12a
25,010 00	.....	.....	.....	.....	13
8,500 00	.....	.....	15,500 00	500 00	14
?	?	?	?	?	15
38,000 00	.....	.....	.....	1,000 00	16
10,000 00	17,800 00	.....	10,000 00	5,000 00	17
285,372 29	22,800 00	18,572 00	101,391 75	45,680 31	

## SCIENCE FOR MEN AND WOMEN

6,500 00	.....	.....	17,500 00	4,000 00	1
5,045 00	.....	?	23,987 00	.....	2
228,834 12	.....	?	286,502 38	3,740 64	3
4,035 18	.....	2500 00	2525 00	.....	4
6,300 00	.....	.....	14,371 00	2,815 35	5
2102,000 00	.....	.....	.....	.....	6
1,720 00	.....	500 00	.....	140 00	7
154,434 30	.....	1,000 00	122,885 38	10,695 99	

## SCIENCE FOR WOMEN

776 25	.....	.....	.....	50 00	1
5,167 38	.....	1,154 45	.....	112 50	2
51,950 00	.....	.....	.....	15,295 23	3
21,875 38	.....	.....	.....	1,538 43	4
79,769 01	.....	1,154 45	.....	16,996 16	
519,575 60	22,800 00	20,726 45	224,277 13	73,372 46	
829,985 65	144,737 88	31,749 01	250,914 97	91,442 83	

TABLE 2—

COLLEGES OF ARTS AND

No.	FINANCIAL STATEMENT—				
	RECEIPTS DURING YEAR				Grounds
	Income of investments	Gifts and bequests	All other sources	Total	
	448	449	450	451	452
1	1,150 00	36,950 00	383,469 43	566,479 03	?
2	11,810 26	2,262 50	37,518 42	54,857 74	3,853 68
3	15,989 00	6,310 00	.....	31,854 00	?
4	18,497 55	.....	.....	223,956 30	.....
5	26,847 00	111,839 00	3,000 00	148,686 00	.....
6	31,855 20	2,017 50	177 25	40,732 20	530 68
7	750 00	4,000 00	42,363 24	113,148 24	7,492 49
8	26,569 48	3,354 06	.....	43,406 28	6,350 18
9	?	?	144,903 65	144,903 25	.....
10	4,403 50	31,698 00	4,661 69	55,966 25	.....
11	3,319 93	6,944 75	12,000 00	46,992 07	250 00
12	.....	185 00	.....	55,255 00	.....
12a	.....	.....	.....	10,994 00	.....
13	.....	.....	.....	25,010 00	.....
14	.....	.....	8,400 00	32,900 00	2,240 00
15	?	?	?	?	?
16	.....	300 00	1,000 00	40,300 00	900 00
17	.....	.....	8,000 00	50,800 00	1,100 00
	141,191 92	205,860 81	645,493 68	1,466,240 36	22,717 03

COLLEGES					OF ARTS AND
1	5,600 00	700 00	2,143 87	36,443 87	200 00
2	.....	600 00	.....	9,632 00	.....
3	28,700 19	100,000 00	14,114 99	161,892 32	?
4	.....	100 00	4,725 00	? 9,885 18	.....
5	9,687 00	250 00	12,040 76	44,964 11	.....
6	.....	.....	23,000 00	125,000 00	500 00
7	.....	9,795 00	382 37	12,537 37	.....
	43,987 19	111,445 00	56,406 99	400,354 85	700 00

COLLEGES OF ARTS AND

1	6,392 90	6,130 40	.....	13,349 55	.....
2	8,576 88	.....	2,269 09	17,280 09	65 00
3	265,155 24	500 00	28,316 61	361,217 08	2,580 17
4	25,448 73	28,904 43	65 00	77,831 79	? 8,000 00
	305,573 75	35,534 83	30,650 70	469,678 51	10,645 17
	490,752 86	352,840 64	732,551 37	2,336,273 72	34,062 20
	619,888 37	469,430 79	820,171 41	3,176,218 12	35,020 88

1 This amount is for permanent investment. 2 This includes

(Continued)

## SCIENCE FOR MEN

(Continued)

## EXPENDITURES DURING YEAR

## ADDITIONS, IMPROVEMENT AND REPAIRS

No.

Buildings	Furniture	Apparatus	Library	Museum	
453	454	455	456	457	
?	?	?	?	?	1
1,985 90	.....	274 14	1,479 74	.....	2
21,066 00	?	?	734 00	.....	3
160 99	.....	.....	.....	.....	4
2,000 00	500 00	500 00	.....	.....	5
413 04	.....	785 30	.....	.....	6
50,000 00	555 02	999 98	470 00	.....	7
5,616 50	379 08	233 66	1,005 22	249 85	8
.....	.....	.....	.....	.....	9
360 85	22 25	.....	.....	.....	10
4,033 68	1,418 32	200 00	300 00	.....	11
1,000 00	.....	.....	95 00	.....	12
300 00	710 00	.....	62 00	.....	12a
800 00	250 00	.....	.....	.....	13
3,160 00	1,100 00	550 00	675 00	820 00	14
?	?	?	?	?	15
2,000 00	500 00	?	100 00	?	16
7,000 00	.....	.....	100 00	.....	17
79,896 96	5,234 67	3,543 08	5,020 96	1,069 85	

## SCIENCE FOR MEN AND WOMEN

1,800 00	400 00	25 00	110 00	.....	1
200 00	.....	30 00	49 00	.....	2
? 20,530 32	?	.....	1,436 08	1,767 02	3
925 00	86 00	.....	.....	.....	4
89 46	363 45	290 75	310 00	.....	5
7,650 00	500 00	500 00	1,100 00	250 00	6
.....	892 67	70 00	200 00	.....	7
31,194 78	2,242 12	915 75	3,205 08	2,017 02	

## SCIENCE FOR WOMEN

.....	174 11	351 09	.....	.....	1
508 17	125 36	139 54	1,007 43	975 00	2
35,306 48	.....	.....	18,841 77	.....	3
? 1,000 00	? 3,000 00	? 4,000 00	485 25	53 17	4
36,814 65	3,299 47	4,490 63	20,334 45	1,028 17	
147,906 39	10,776 26	8,949 46	28,560 49	4,115 04	
171,299 76	16,320 18	13,510 20	35,672 02	4,150 29	

improvements in grounds, buildings, furniture and apparatus.



TABLE 2—

COLLEGES OF ARTS AND

No.	FINANCIAL					
	EXPENDITURES					
	Salaries for instruction	Fees to professors	Salaries paid other officers and employees	Prizes, scholarships and fellowships	GIVEN OR LENT TO STUDENTS	
					No. of students	Amount
	458	459	460	461	462	463
1	230,100 44	.....	62,000 00	5,948 00	....	.....
2	26,437 50	.....	4,396 95	400 00	?	1,126 97
3	22,419 00	.....	1,240 00	1,156 00	....	.....
4	12,500 00	.....	2,800 00	3,400 00	....	.....
5	33,009 00	5,000 00	1,374 00	1,000 00	?	500 00
6	23,755 00	.....	2,700 00	3,903 00	?	115 00
7	10,550 00	.....	7,257 32	1,069 12	....	.....
8	29,562 00	.....	3,510 00	825 00	?	6,747 50
9	111,648 84	.....	7,714 00	.....	....	.....
10	8,450 00	.....	2,467 87	430 00	....	.....
11	12,260 00	.....	5,410 96	2400 00	....	.....
12	5,000 00	.....	5,000 00	150 00	?	5,000 00
12a	450 00	1,200 00	1,106 00	560 00	....	.....
13	.....	.....	2400 00	2100 00	....	.....
14	17,500 00	1,600 00	4,880 00	5,000 00	?	320 00
15	?	?	?	?	?	?
16	500 00	.....	5,000 00	800 00	....	.....
17	2,350 00	.....	1,950 00	768 00	....	.....
	536,491 78	7,800 00	119,207 10	25,909 12	?	13,809 47

COLLEGES OF ARTS AND						
1	16,000 00	.....	4,000 00	25 00	?	3,300 00
2	4,902 00	.....	1,300 00	.....	....	.....
3	48,557 00	.....	18,144 91	10,640 00	....	.....
4	2,860 00	.....	192 00	.....	6	575 00
5	12,350 00	.....	4,861 16	.....	?	1,000 00
6	96,150 00	.....	5,850 00	.....	....	.....
7	3,490 00	100 00	1,459 50	.....	?	145 00
	184,309 00	100 00	35,807 57	10,665 00	6	5,020 00

COLLEGES OF ARTS AND

1	8,575 00	.....	300 00	1,606 00	....	.....
2	9,222 73	.....	200 00	.....	....	.....
3	174,379 98	.....	.....	10,136 76	?	500 06
4	31,746 53	.....	5,526 00	.....	?	4,927 08
	223,924 24	.....	6,026 00	11,742 76	?	5,427 14
	944,725 02	7,900 00	161,040 67	48,316 88	6	24,256 61
	1,196,352 90	101,124 35	240,404 88	62,690 81	52	34,327 41

1 Maintenance of professors.

(Continued)

## SCIENCE FOR MEN

STATEMENT — (Continued)

## DURING YEAR

Fuel and lights	Insurance	Interest on debt	Other incidentals	All other purposes	No.
464	465	466	467	468	
12,497 18	301 52	628 46	.....	146,945 21	1
.....	166 00	15,360 69	5,860 14	1,892 74	2
834 00	443 00	1,763 00	.....	2,058 00	3
?	?	.....	2,882 05	286 45	4
1,349 00	100 00	.....	.....	5,000 00	5
800 00	444 50	.....	178 04	2,998 75	6
5,899 15	400 00	2,776 53	.....	21,407 63	7
605 00	76 00	.....	733 50	.....	8
.....	.....	.....	.....	25,540 81	9
1,339 73	531 73	2,345 00	.....	9,248 36	10
5,333 31	2,740 80	12,731 47	837 01	?	11
1,350 00	50 00	.....	20,930 00	16,055 00	12
644 00	67 00	1,975 00	3,640 00	.....	12a
? 200 00	.....	675 00	?100 00	.....	13
2,455 00	200 00	.....	.....	2,400 00	14
?	?	?	?	?	15
3,000 00	2,500 00	?	?	?	16
1,530 00	250 00	3,005 00	31,747 00	.....	17
37,836 37	8,270 55	41,260 15	66,907 74	233,832 95	

## SCIENCE FOR WOMEN

2,400 00	499 50	1,775 00	?	19,098 63	1
1,500 00	250 00	240 00	158 00	.....	2
11,958 07	892 82	320 02	6,195 35	52,058 07	3
375 00	42 00	4,870 50	.....	.....	4
2,085 56	750 00	350 00	1,690 50	20,823 23	5
2,100 00	.....	.....	7,500 00	.....	6
180 86	7 00	.....	373 51	4,720 76	7
20,599 49	2,441 32	7,555 52	15,917 36	96,700 69	

## SCIENCE FOR MEN AND WOMEN

? 200 00	.....	?300 00	503 48	.....	1
224 72	167 50	861 79	34 49	1,761 04	2
7,276 92	415 32	.....	.....	76,332 43	3
1,794 15	1,185 26	3,733 20	1,602 48	10,778 85	4
9,495 79	1,768 08	4,894 99	2,140 45	88,872 32	
67,931 65	12,479 95	53,710 66	84,965 55	419,405 96	
91,935 12	13,960 67	71,767 28	123,102 67	498,160 95	

TABLE 2—  
COLLEGES OF ARTS AND

No.	FINANCIAL STATE- MENT ( <i>Continued</i> )	ESTIMATED EXPENSES				
	EXPENDITURES DURING YEAR	Annual tuition fees	TABLE BOARD		RENT OF FURNISHED ROOM	
	Total		No. of weeks	Average cost for year	No. of weeks	Average cost for year
	469	470	471	472	473	474
1	458,420 81	155	233	2128 to 2198	233	285 to 2132
2	63,234 45	75 to 90	35	105 to 140	35	70 to 105
3	31,713 00	75	36	99 to 180	36	18 to 30
4	22,029 49	75	?	108 to 144	36	54
5	250,323 00	100	38	150 to 400	35	70 to 350
6	36,633 75	45 to 75	36	90 to 108	36	36 to 54
7	108,877 24	60	42	240	42	50
8	55,893 49	75	36	90 to 144	36	36 to 72
9	144,903 65	.....	.....	.....	.....	.....
10	25,195 79	.....	37	2129	37	246
11	45,915 55	60	.....	.....	.....	.....
12	54,630 00	50 to 100	43	133	43	67
12a	10,714 00	30 to 50	43	110 to 140	43	40 to 50
13	22,325 00	60	.....	.....	.....	.....
14	32,900 00	?	?	?	?	?
15	?	40	40	296	40	64
16	215,300 00	200	?	?	?	?
17	49,800 00	32 to 60	42	140	42	40
	1,208,809 22					

COLLEGES OF ARTS AND

1	49,633 13	50	35	150	35	100
2	8,629 00	30 to 150	40	140	40	60
3	172,499 66	100 to 115	38	2300	38	?
4	9,925 50	150	37	75 to 200	37	75 to 200
5	44,964 11	100	40	250	40	50
6	125,000 00	.....	.....	.....	.....	.....
7	11,639 30	?	?	?	?	?
	422,290 70					

COLLEGES OF ARTS AND

1	12,009 68	45	38	95 to 114	38	19 to 38
2	15,493 04	36	39	78 to 120	39	21 to 30
3	325,769 83	75	35	117	35	64
4	77,831 97	30 to 100	37	85 to 130	37	28 to 55
	431,104 52	Total table 2				
	2,062,204 44					
	2,733,860 63	Totals 2 and 3				

(Continued)

## SCIENCE FOR MEN

OF STUDENTS			ADDITIONAL INFORMATION		No.
All other expenses	Total average expenses	New buildings	Benefactions announced but not received		
475	476	477	478		
28 to 215	2221 to 2345	.....	130,000	1	Columbia 1
?	2280 to 2300	.....	.....	2	Union ... 2
?	217 to 276	.....	.....	3	Hamilton 3
15 to 50	123 to 323	.....	.....	4	Hobart... 4
100 to 200	420 to 1050	.....	.....	5	U.C.N.Y. 5
25 to 50	196 to 287	.....	.....	6	Colgate... 6
60 to 100	410 to 450	Junior's building 1	.....	7	St J's F. 7
?	?	.....	.....	8	Roch'r... 8
.....	.....	.....	.....	9	C.C.N.Y. 9
220	225 to 245	.....	.....	10	St Steph. 10
?	?	.....	.....	11	St F. X'r. 11
25 to 50	275 to 350	.....	.....	12	Manhat.. 12
.....	180 to 240	.....	.....	12a	St Jos.. 12a
?	?	.....	.....	13	St J's B. 13
?	200	.....	.....	14	St Bonav. 14
1250	2245 to 12250	.....	.....	15	Canisius.. 15
?	2200	.....	.....	16	Niagara.. 16
10 to 20	222 to 260	.....	.....	17	St Fran.. 17

## SCIENCE FOR WOMEN

?	2300	.....	.....	1	Elmira.... 1
10 to 20	240 to 400	Dormitory 1	.....	2	Ingham... 2
?	400	.....	.....	3	Vassar... 3
10 to 20	310 to 570	.....	.....	4	Rutgers... 4
250	450	Main (?130,000) 1	.....	5	Wells .... 5
.....	.....	.....	.....	6	N.C.C.N.Y 6
?	?	.....	.....	7	Barnard... 7

## SCIENCE FOR MEN AND WOMEN

16 to 35	175 to 232	.....	175	1	St Lawr.... 1
15 to 25	150 to 211	.....	.....	2	Alfred.... 2
145	400	.....	.....	3	Cornell ... 3
50 to 100	193 to 385	.....	.....	4	Syracuse.. 4

Total table 2

Totals 2 and 3





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## TABLE 3

[For general explanatory notes see page 1551]

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### STATISTICS OF SCHOOLS

OF

### LAW, MEDICINE, PHARMACY, ETC.,

REPORTING TO THE

University of the State of New York for 1889-90

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<sup>1</sup>For statistics of those theological and special schools which are not included here (because incomplete) see summary under name of each institution preceding these tables.

No.	NAME	LOCATION
		City or village and county
1		2
1	University of the City of New York (Law Department)....	New York.....
2	Union University, Albany Law School.....	Albany.....
3	Columbia College, School of Law.....	New York.....
4	Cornell University, Law School.....	Ithaca, Tompkins.....
5	Niagara University, Buffalo Law School.....	Buffalo, Erie.....
LAW		
1	Columbia College, College of Physicians and Surgeons...	New York.....
2	University of the City of New York (Medical Department)	New York.....
3	Union University, Albany Medical College.....	Albany.....
4	University of Buffalo (Medical Department).....	Buffalo, Erie.....
5	New York College of Veterinary Surgeons.....	New York.....
6	Long Island College Hospital.....	Brooklyn, Kings.....
7	New York Homœopathic Medical College.....	New York.....
8	Bellevue Hospital Medical College.....	New York.....
9	New York Medical College and Hospital for Women.....	New York.....
10	Women's Medical College of the New York Infirmary.....	New York.....
11	New York College of Dentistry.....	New York.....
12	Eclectic Medical College.....	New York.....
13	Syracuse University, College of Medicine.....	Syracuse, Onondaga.....
14	American Veterinary College.....	New York.....
15	New York Ophthalmic Hospital.....	New York.....
16	New York Polyclinic.....	New York.....
17	Niagara University (Medical Department).....	Buffalo, Erie.....
18	New York Post Graduate Medical School and Hospital....	New York.....
MEDICINE		
1	College of Pharmacy of the City of New York.....	New York.....
2	Union University, Albany College of Pharmacy.....	Albany.....
3	University of Buffalo, College of Pharmacy.....	Buffalo, Erie.....
PHARMACY		
1	Arbun Theological Seminary.....	Auburn, Cayuga.....
2	Gen. Theological Sem. of the Protestant Episcopal Church.	New York.....
2	Union Theological Seminary.....	New York.....
4	German Martin Luther College.....	Buffalo, Erie.....
5	St Lawrence University, Canton Theological Seminary..	Canton, St Lawrence.....
6	Christian Biblical Institute.....	Stanfordville, Dutchess.
7	Wagner Memorial Lutheran College.....	Rochester, Monroe.....
THEOLOGY		
1	Rensselaer Polytechnic Institute.....	Troy, Rensselaer.....
2	Columbia College, School of Mines.....	New York.....
POLYTECH.		
1	Columbia College, School of Political Science.....	New York.....
2	Grand Conservatory of Music.....	New York.....
3	New York College for the Training of Teachers.....	New York.....
4	New York State Normal College.....	Albany.....

1 "L." legislature, "R." regents, "T." trustees or governing body of university of which this school is summary under each school preceding these tables.

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1617

INCORPORATED		School of practice or denomination	President or dean	Years in college course.	No.
By	Date				
3	4	5	6	7	
T	2 Je 1835	.....	John Hall, D. D., LL. D. (Chancellor)....	2	1
L	17 Ap 1851	.....	George W. Kirchwey .....	2	2
T	My 1858	.....	Theodore W. Dwight (Warden) .....	2	3
T	16 Je 1886	.....	Hon. Douglas Boardman, M. A .....	2	4
T	9 My 1887	.....	Charles Daniels, LL. D. ....	2	5
SCHOOL					
R	12 Mr 1807	Allopathic .....	James Woods McLane, M. D. ....	3	1
L	11 F 1837	Allopathic .....	Charles Inslee Pardee, M. D. ....	3	2
L	16 F 1839	Allopathic .....	Thomas Hun, M. D. ....	3	3
L	11 My 1846	Allopathic .....	Matthew D. Mann, M. D. ....	3	4
L	6 Ap 1857	Allopathic .....	William T. White, M. D. ....	3	5
L	6 Mr 1858	Allopathic .....	Alexander J. C. Skene, M. D. ....	3	6
L	12 Ap 1860	Homoeopathic ..	T. F. Allen, M. D., LL. D. ....	3	7
L	3 Ap 1861	Allopathic .....	William T. Lusk, M. A., M. D. ....	3	8
L	14 Ap 1863	Homoeopathic ..	Phoebe J. B. Wait, M. D. ....	3	9
L	13 Ap 1864	Allopathic .....	Emily Blackwell, M. D. ....	3	10
L	31 Mr 1865	Dental surgery..	Frank Abbott, M. D. ....	4	11
L	22 Ap 1865	Eclectic .....	George W. Boskowitz, M. D. ....	4	12
L	6 Ja 1872	Allopathic .....	Henry D. Didama, M. D., LL. D. ....	3	13
L	29 Ap 1875	Allopathic .....	Alexander F. Liautard, M. D., V. M. ....	2	14
L	20 My 1879	Homoeopathic ..	Wm. E. Rounds, M. D., O. et A. Chir. ....	?	15
L	15 N 1882	Allopathic .....	W. Gill Wylie, M. D. ....	?	16
R	7 Ag 1883	Allopathic .....	John Cronyn, M. D., Ph. D. ....	4	17
L	25 My 1886	Allopathic .....	D. B. St John Roosa, M. D., LL. D. ....	?	18
SCHOOL					
L	25 Ap 1831	.....	Peter W. Bedford, Ph. G. ....	2	1
T	21 Je 1881	.....	Willis G. Tucker, M. D., Ph. D. ....	2	2
T	8 Mr 1886	.....	Willis G. Gregory, Ph. G., M. D. ....	2	3
DENOMINATION					
L	14 Ap 1820	Presbyterian ....	(No presiding officer) .....	3	1
L	5 Ap 1822	Prot. Episcopal..	Rev. Eugene Aug. Hoffman, D. D. ....	3	2
L	27 Mr 1839	Presbyterian ....	Rev. Thomas S. Hastings, D. D., LL. D. ....	3	3
L	26 Ag 1853	Lutheran .....	Rev. Martin Burk .....	3	4
L	3 Ap 1856	Universalist ....	Rev. Isaac Morgan Atwood, D. D. ....	3	5
L	16 Ap 1868	Christian .....	Rev. J. B. Weston, D. D. ....	3	6
L	30 Jl 1886	Lutheran .....	Rev. J. Steinhauser (Director).....	6	7
SCHOOL					
L	21 Mr 1826	.....	John Hudson Peck .....	4	1
T	1864	.....	Charles F. Chandler, Ph. D. ....	4	2
SCHOOL					
T	7 Je 1880	.....	John W. Burgess, LL. D. ....	3	1
L	23 My 1884	.....	Ernst Eberhard, Mus. Doc. ....	3	2
R	12 Ja 1889	.....	Nicholas Murray Butler, Ph. D. ....	2	3
R	13 Mr 1890	.....	William J. Milne, Ph. D., LL. D. ....	2	4



EXPLANATION — r Regularly required by institution.      w Admitted.

No.	REQUIREMENTS												
	Certificates of moral character	Age	Diplomas *	Regents' diploma†	Regents' cert.†	Certificates	Regents' pass cards †	Church membership	Intention to enter ministry	Spelling	Arithmetic	Eng. language	Eng. composition
	8	9	10	11	12	13	14	15	16	17	18	19	20
1			d	...	d	...	...	...	...	...	...	...	...
2	r	18	w <sup>1</sup>	...	w <sup>1</sup>	...	...	...	...	...	...	...	...
3	...	18	w	...	w	...	...	...	...	r	r	r	r
4	...	...	w	...	w	...	...	...	...	r	r	r	r
5	...	18	w	...	w	w <sup>2</sup>	...	...	...	r	r	r	r
1	...	...	w <sup>3</sup>	w	w <sup>4</sup>	w <sup>3,5</sup>	w	...	...	...	...	...	...
2 <sup>6</sup>	r	18	...	w	w <sup>4</sup>	...	w	...	...	...	...	...	...
3	r	18	...	w	w <sup>4</sup>	...	w	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
4	...	18	w <sup>3</sup>	...	w <sup>4</sup>	w <sup>3,7</sup>	...	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
5	...	...	?	?	?	?	?	?	?	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
6	?	?	?	?	?	?	?	?	?	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
7	...	...	w <sup>3</sup>	w	w <sup>4</sup>	w <sup>3,8</sup>	w	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
8	...	...	...	w	w <sup>4</sup>	w <sup>3,7</sup>	w	...	...	...	...	...	...
9	r	18	w <sup>3</sup>	w	w <sup>4</sup>	w <sup>3,2</sup>	w	...	...	...	...	...	...
10	...	...	w <sup>3</sup>	...	r <sup>4</sup>	...	...	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
11	...	...	w	...	...	w <sup>2</sup>	...	...	...	...	r	r	r
12	r	18	w <sup>3</sup>	w	w <sup>4</sup>	w <sup>3,2</sup>	w	...	...	...	...	...	...
13	...	...	w <sup>3</sup>	...	r <sup>4</sup>	w <sup>3,2</sup>	...	...	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
14	...	...	w	...	...	w <sup>8</sup>	...	...	...	r	...	...	...
15	...	...	...	...	...	...	...	...	...	...	...	...	...
16 <sup>10</sup>	...	...	...	...	...	...	...	...	...	...	...	...	...
17 <sup>11</sup>	r	...	w <sup>3</sup>	w	w <sup>4</sup>	w <sup>3,2</sup>	w	...	...	...	r <sup>3</sup>	r <sup>3</sup>	r <sup>3</sup>
18 <sup>10</sup>	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	w	...	...	w <sup>12</sup>	...	...	...	r	...	r	r
2	...	...	...	...	...	w <sup>12</sup>	...	...	...	...	r	r	r
3	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	r	...	...	w <sup>13</sup>	...	r	...	...	...	...	...
2	r	...	...	...	...	r <sup>13</sup>	...	r <sup>14</sup>	r	...	...	...	...
3	...	...	w <sup>15</sup>	...	...	...	...	r	...	...	...	...	...
4	...	...	...	...	...	...	...	...	r <sup>16</sup>	...	...	...	...
5	r	...	...	...	...	...	...	d	...	...	...	...	...
6	...	...	...	...	...	...	...	...	...	...	...	...	...
7	r	12	...	...	...	...	...	...	...	...	r	r <sup>17</sup>	...
1	...	...	...	...	...	...	...	...	...	r	r	r	...
2	...	18	...	...	...	...	...	...	...	...	r	r	r
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	18	...	...	...	...	...	...	...	r	r	r <sup>19</sup>	r
4 <sup>20</sup>	...	...	...	...	...	...	...	...	...	...	...	...	...

\* From some degree-conferring college.    † For arithmetic, grammar, geography, spelling, American natural philosophy.    ‡ Accepted in lieu of examination in above studies, when covering same subjects. their ability to pursue the studies of the school.    2 Of graduation from a reputable academy or high diplomas, and certificates of graduation, matriculation or attainment must be endorsed by the regents, note.)    4 Candidates who possess a college degree or attainments accepted by the regents as equivalents on application. This applies only to students beginning the study of medicine after 13 Je 1889.    5 Certificate 1889.    6 No definite requirement for students beginning study of medicine before 13 Je 1889.    7 Certificate 9 Botany and German, French or Latin also required at present time.    10 Intended only for those students education.    13 Of fitness to enter on theological studies.    14 In P. E. church.    15 In default of diploma, of an English education.    17 German also required.    18 Including higher algebra and solid geometry; physiology and drawing.    20 For requirements, see pages 1545-1547.

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1619

without examination by institution. d Desired but not required.

## FOR ADMISSION

Rhetoric	Geography	Algebra	Geometry	HISTORY				Physics	Chemistry	Cæsar	Virgil	Cicero	No.
				General	English	Ancient	U. S. Hist.						
21	22	23	24	25	26	27	28	29	30	31	32	33	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
r	.....	.....	.....	.....	r	r	r	.....	.....	r	r	r	2
.....	r	.....	.....	.....	r	.....	r	.....	.....	d	.....	.....	3
.....	r	.....	.....	.....	r	.....	r	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	r <sup>3</sup>	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	r <sup>3</sup>	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	?	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
r <sup>3</sup>	r <sup>3</sup>	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	r <sup>3</sup>	r <sup>3</sup>	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	r	.....	.....	r	.....	.....	.....	r	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	r	r	.....	.....	.....	.....	r <sup>3</sup>	.....	.....	.....	.....	12
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	r	.....	.....	13
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	r <sup>3</sup>	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18
.....	r	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	r	r <sup>18</sup>	r <sup>18</sup>	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
r	.....	.....	.....	.....	r	.....	r	r	r	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	r	r	r	r	.....	.....	r	.....	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4

history, English composition, elements of natural philosophy; in law schools English history instead of See also note 4 below. 1 Those not possessing either of these must by examination satisfy the faculty of school. 3 Applies only to students beginning the study of medicine before 13 Je 1889. After that date all and all preliminary examinations conducted under their supervision. (See also + above, and following of studies mentioned under + above are exempt from examination in those studies and receive the certificate of matriculation in Columbia school of arts or mines, or the regents' certificate as required after 13 Je from preceptor of being entered as a medical student. 8 Of having passed some college entrance examination. who have already taken the degree of M. D. 11 Elementary Latin also required. 12 Of common school candidates are examined in collegiate studies. 16 Candidates must also pass an examination in branches also in German, French, physical geography, drawing and book-keeping. 19 Also English literature,

No.	CALENDAR FOR						
	Entrance examinations held	1ST TERM		2D TERM		3D TERM	
		No. of weeks	Began	No. of weeks	Began	No. of weeks	Began
	34	35	36	37	38	39	40
1	.....	35	1 O	.....	.....	.....	.....
2	14 S	14	16 S	12	6 Ja	11	7 Ap
3	5 O	18	7 O	17	4 F	.....	.....
4	24-25 S	13	24 S	11	3 Ja	10	1 Ap
5	30 S	17	30 S	17	3 F	.....	.....

1	.....	35	1 O	.....	.....	.....	.....
2	.....	10	13 Mr	22	25 S	.....	.....
3	28 S	25	24 S	.....	.....	.....	.....
4	?	12	22 S	13	16 D	8	28 Mr
5	.....	22	1 O	.....	.....	.....	.....
6	.....	25	25 S	12	14 Mr	.....	.....
7	1 O	11	1 O	12	6 Ja	.....	.....
8	?	23	25 S	12	17 Mr	.....	.....
9	23-25 S	26	1 O	.....	.....	.....	.....
10	1 O and 3 F	16	1 O	16	26 Ja	.....	.....
11	28 S	32	1 Mr	20	1 O	.....	.....
12	?	26	17 S	.....	.....	.....	.....
13	1 O	19	1 O	17	12 F	.....	.....
14	7 O	20	8 O	6	3 Mr	.....	.....
15	?	11	1 O	13	6 Ja	.....	.....
16	.....	?	?	?	?	.....	.....
17	16-18 S	13	18 S	14	2 Ja	.....	.....
18	?	?	?	?	?	?	?

1	4-11 O	25	7 O	.....	.....	.....	.....
2	15 O	22	7 O	.....	.....	.....	.....
3	?	22	2 O	.....	.....	.....	.....

1	18 S	13	18 S	18	2 Ja	.....	.....
2	18 S	?	18 S	?	7 Ja	?	?
3	?	?	18 S	?	7 Ja	.....	.....
4	2 S	16	2 S	12	6 Ja	14	14 Ap
5	25 S	21	25 S	17	12 F	.....	.....
6	?	14	18 S	19	2 Ja	.....	.....
7	3 S	15	3 S	11	6 Ja	7	14 Ap

1	18-19 S	19	18 S	19	6 F	.....	.....
2	?	?	7 O	?	6 F	.....	.....

1	.....	?	7 O	?	6 F	?	?
2	1-15 S	?	?	?	?	?	?
3	18-20 Je '89 17-19 S 19-21 Je '90	12	23 S	12	6 Ja	10	9 Ap
4	?	?	?	?	?	?	?

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1621

PAST YEAR								TRUSTEES			No.
COMMENCEMENT		End of academic fiscal year	ACTUALLY IN SESSION	IN LONG VACATION	IN OTHER VACATIONS	Holidays closed	No. in full board	No. in quorum	No. of present vacancies		
1890	1891		Weeks Days	Weeks Days	Weeks Days						
41	42	43	44	45	46	47	48	49	50		
29 My	28 My	31 Ag	31-5	17	0	3	A	A	A	1	
18 Je	17 Je	1 Jl	36	13	3	1	19	10	0	2	
11 Je	10 Je	30 Je	32-5	16-4	2	6	A	A	A	3	
19 Je	18 Je	1 Ag	34-1	13-4	3-6	4	A	A	A	4	
29 My	30 My	1 Je	31-3	17-2	3-1	2	....	....	....	5	
Total.....							19	10	0		
11 Je	10 Je	15 S	35	15-6	6	3	25	7	3	1	
26 Mr	24 Mr	15 Je	31-3	18-3	2-2	0	A	A	A	2	
19 Mr	1 Ap	1 Ap	23	27	1-4	4	23	7	2	3	
22 Mr	24 Mr	22 My	33	17	2	1	19	10	0	4	
7 Mr	?	1 S	21-2	29-5	1-1	0	16	5	0	5	
13 Mr	12 Mr	1 Jl	34-1	15-4	2-1	2	25	5	1	6	
10 Ap	9 Ap	1 Ap	22-2	26-5	2-5	3	19	13	0	7	
10 Mr	?	1 Ap	33-6	17-2	1	?	21	10	0	8	
22 Ap	21 Ap	30 S	25-4	25	1-2	2	17	9	0	9	
28 My	28 My	24 My	32-1	18-2	1-4	1	39	7	1	10	
11 Mr	10 Mr	11 Mr	51	0	1-1	0	13	7	0	11	
12 Mr	17 Mr	30 Je	26	?26-1	0	?	13	6	1	12	
12 Je	11 Je	9 Je	33-5	16	2	3	A	A	A	13	
5 Mr	18 Mr	1 Mr	24	26-1	?2	?	15	5	0	14	
8 Ap	10 Ap	31 Jl	22-1	27-4	2-1	2	17	7	1	15	
15 Ap	14 Ap	1 My	?52-1	0	0	?	38	20	0	16	
?	?	?	28	22	1-5	3	....	....	....	17	
Total.....							310	123	10	18	
29 Ap	27 Ap	30 Je	24-3	24-6	2	0	21	7	0	1	
11 Mr	10 Mr	31 Jl	20-3	30-1	1-1	3	10	5	0	2	
25 Mr	24 Mr	15 Ap	22	27	?3-1	?	19	10	1	3	
Total.....							50	23	1		
8 My	7 My	8 My	31	18-6	2-1	1	15	8	0	1	
28 My	20 My	28 My	32-6	17-1	2-1	?	50	11	2	2	
6 My	19 My	1 My	30-6	19-1	1-5	3	28	?	2	3	
.....	.....	31 Ag	42	6	3	8	9	5	0	4	
10 Je	?	10 Je	35	11-1	4-6	8	A	A	A	5	
15 My	13 My	15 My	33	17	2-1	0	27	11	0	6	
6 Je	?	6 Je	34-2	12-3	4-6	4	12	7	0	7	
Total.....							141	42	4		
18 Je	?	1 Mr	37	13	3	1	25	10	1	1	
11 Je	10 Je	30 Je	?	?	?	?	A	A	A	2	
Total.....							25	10	1		
11 Je	10 Je	?	?	?	?	?	A	A	A	1	
31 My	?	29 Ag	?	?	?	5	9	5	0	2	
11 Je	10 Je	30 Je	34-3	13	4-1	4	18	10	2	3	
19 Je	19 Je	25 Jl	40	10	1-4	4	5	3	0	4	
Total.....							32	18	2		
Grand total.....							577	226	18		



No.	TRUSTEES				ADMINISTRATION		OFFICERS OF INSTRUCTION							TOTAL NO. OF INSTRUCTORS	
	VACANCIES OCCURRING BY			Appointed this year	Officers and clerical assistants	Other employees	Professors	Adjuncts	Instructors	Assistants	Lecturers	Men	Women		
	End of term	Death	Resignation												
51	52	53	54	55	56	57	58	59	60	61	62	63			
1	A	A	A	A	4	1	3	0	0	0	6	9	0		
2	?	?	?	?	3	1	8	0	0	0	2	10	0		
3	A	A	A	A	4	?	27	?	24	0	24	215	0		
4	A	A	A	A	3	....	5	0	0	0	8	13	0		
5	....	....	....	....	4	?	14	0	0	0	9	23	0		
	?	?	?	?	18	2	37	?	4	0	29	70	0		
1	....	3	....	....	6	9	18	1	5	61	3	88	0		
2	A	A	A	A	5	11	18	5	13	27	0	63	0		
3	....	2	2	?	3	1	13	0	12	7	5	37	0		
4	....	....	....	....	7	2	20	0	0	2	8	30	0		
5	....	....	....	....	3	2	9	0	0	0	8	17	0		
6	....	1	....	3	3	2	21	0	4	0	8	33	0		
7	....	....	....	1	5	3	23	0	3	7	3	36	0		
8	....	2	....	1	3	5	15	1	6	22	3	47	0		
9	....	....	2	2	4	1	15	1	0	2	4	8	14		
10	....	1	2	11	5	....	16	1	7	1	1	13	13		
11	....	1	....	3	6	5	5	0	30	5	3	43	0		
12	....	....	....	....	4	4	9	0	2	1	11	23	1		
13	A	A	A	A	4	1	16	0	3	1	6	26	0		
14	....	....	....	....	2	5	11	5	0	0	0	16	0		
15	....	....	....	....	4	....	9	0	0	0	3	12	0		
16	....	....	....	....	3	15	24	0	27	42	37	130	0		
17	....	....	....	....	3	?	13	2	0	2	6	23	0		
18	....	2	1	10	21	37	0	48	63	0	148	0			
	....	10	8	22	80	87	292	16	160	243	109	793	28		
1	2	2	....	6	5	2	4	0	3	1	0	8	0		
2	....	1	?	3	5	....	3	0	0	0	0	3	0		
3	?	?	?	?	4	2	5	0	2	2	1	10	0		
	2	3	2	9	14	4	12	0	5	3	1	21	0		
1	1	....	....	1	6	2	7	0	0	0	0	7	0		
2	....	2	....	2	9	?	8	0	3	0	2	13	0		
3	?	?	?	2	4	....	7	0	3	1	2	13	0		
4	....	....	....	....	2	?	1	0	0	0	0	1	0		
5	A	A	A	A	3	2	3	0	0	0	0	3	0		
6	1	1	....	2	2	1	5	0	0	0	0	5	0		
7	....	....	1	1	3	....	4	0	0	0	0	4	0		
	2	3	1	6	29	5	35	0	6	1	4	46	0		
1	....	2	....	1	4	2	7	2	2	6	1	18	0		
2	A	A	A	A	10	8	14	6	125	18	1	64	0		
	....	2	....	1	14	10	21	8	27	24	2	82	0		
1	A	A	A	A	24	?	22	24	?	?	25	211	0		
2	....	....	1	1	2	?	?	?	?	?	?	244	22		
3	....	....	2	1	9	19	8	0	12	4	2	10	16		
4	....	....	....	....	3	2	5	0	11	0	0	5	11		
	....	....	3	2	18	21	15	4	23	4	7	70	29		
	4	18	14	40	173	129	412	28	225	275	152	1,082	57		

1 Including 14 fellows meeting.

2 In some schools officers not giving instruction have a seat in faculty and others

OFFICERS OF INSTRUCTION										STUDENTS		No.
2Total no. of seats in faculty	VACANCIES OCCURRING BY				Appointed this year	PROMOTIONS			BY CLASSES			
	End of term	Death	Resig- nation	Re- moval		In title alone	In salary alone	In both title and salary	FRESHMAN 1ST YEAR			
									Men	Women		
64	65	66	67	68	69	70	71	72	73	74		
3									81	.....	1	
10			1		2				13	.....	2	
2				1	7				250	.....	3	
5									59	.....	4	
14									20	.....	5	
32			1	1	9				423	.....		
7	None reported for these schools.				7	3			488	.....	1	
8									233	.....	2	
15									64	.....	3	
7						2			96	13	4	
9					1	3			61	.....	5	
10						1			98	.....	6	
9				1		3	1		54	.....	7	
9			2			1	1		147	.....	8	
15						4			0	11	9	
17				1		1	3		0	35	10	
5									117	.....	11	
7				1		4	2		39	8	12	
16				2		1	5		17	1	13	
7				1		2	3			.....	14	
9										.....	15	
24			1							.....	16	
?										13	.....	17
?			1			5	6			.....	.....	18
174			4	6	1	32	26	.....	.....	1,427	68	
4	None reported for these schools.	1	2		2				.....	.....	1	
3									.....	.....	2	
5									.....	.....	3	
12			1	2		2			.....	.....		
6			1						1	10	.....	1
9						3				18	.....	2
7							1			66	.....	3
1						1				1	.....	4
3										5	1	5
4			1							.....	?	6
4					1			2		?	?	7
34			2		1	3	1	2	1	100	1	
10								4		54	.....	1
20				1		7	2		5	75	.....	2
30				1		7	2	4	5	129	.....	
?			?	?	?	1	?	1	?	?	?	1
?										?	?	2
9				3						.....	.....	3
16						1				?	?	4
25			?	3	?	2	?	1	?	?	?	
307			7	13	3	55	29	7	6	2,079	69	

who do give instruction have not. This column simply shows total number entitled to seats in faculty

NUMBER AND CLASSIFICATION OF STUDENTS											
No.	BY CLASSES						BY				
	SOPHOMORE 2D YEAR		JUNIOR 3D YEAR		SENIOR 4TH YEAR		LL. B.	M. D.		D. D. S.	V. S.
	Men	Women	Men	Women	Men	Women		Men	Women		
	75	76	77	78	79	80	81	82	83	84	85
1	....	.....	.....	.....	61	0	142	.....	.....	.....	.....
2	....	.....	.....	.....	37	0	50	.....	.....	.....	.....
3	....	.....	.....	.....	206	0	456	.....	.....	.....	.....
4	....	.....	.....	.....	37	0	96	.....	.....	.....	.....
5	....	.....	.....	.....	6	0	26	.....	.....	.....	.....
	....	.....	.....	.....	347	0	770	.....	.....	.....	.....
1	....	.....	111	0	20	0	.....	619	0	.....	.....
2	....	.....	210	0	173	0	.....	616	0	.....	.....
3	49	0	24	0	11	0	.....	148	0	.....	.....
4	....	.....	.....	.....	102	19	.....	198	32	.....	.....
5	....	.....	33	0	2	0	.....	.....	.....	.....	96
6	....	.....	61	0	153	0	.....	212	0	.....	.....
7	38	0	.....	.....	30	0	.....	122	0	.....	.....
8	....	.....	140	0	2119	0	.....	406	0	.....	.....
9	....	.....	0	10	0	15	.....	0	36	.....	.....
10	....	.....	0	19	0	20	.....	0	80	.....	.....
11	92	0	23	0	15	6	.....	.....	.....	247	.....
12	28	4	3	1	2	0	.....	72	13	.....	.....
13	....	.....	12	3	8	0	.....	38	4	.....	.....
14	....	.....	67	0	65	0	.....	.....	.....	.....	132
15	....	.....	.....	.....	.....	.....	.....	8	0	.....	.....
16	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	....	.....	10	0	17	0	.....	40	0	.....	.....
18	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	207	4	694	33	617	54	.....	2,479	165	247	228
1	....	.....	160	1	119	2	.....	.....	.....	.....	.....
2	....	.....	32	0	21	0	.....	.....	.....	.....	.....
3	....	.....	37	1	20	0	.....	.....	.....	.....	.....
	....	.....	229	2	160	2	.....	.....	.....	.....	.....
1	....	.....	15	0	18	0	.....	.....	.....	.....	.....
2	....	.....	20	0	24	0	.....	.....	.....	.....	.....
3	....	.....	49	0	43	0	.....	.....	.....	.....	.....
4	....	.....	3	0	1	0	.....	.....	.....	.....	.....
5	....	.....	12	1	3	0	.....	.....	.....	.....	.....
6	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	?	?	?	?	?	?	.....	.....	.....	.....	.....
	?	?	99	1	89	?	.....	.....	.....	.....	.....
1	43	0	42	0	25	0	.....	.....	.....	.....	.....
2	69	0	33	0	54	0	.....	.....	.....	.....	.....
	112	0	75	0	79	0	.....	.....	.....	.....	.....
1	?	?	?	?	?	?	.....	.....	.....	.....	.....
2	?	?	?	?	?	?	.....	.....	.....	.....	.....
3	....	.....	0	41	0	9	.....	.....	.....	.....	.....
4	?	?	?	?	?	?	.....	.....	.....	.....	.....
	?	?	?	41	?	9	.....	.....	.....	.....	.....
	319	4	1,097	77	1,292	65	770	2,479	165	247	228

1 Including 7 who have attended more than the prescribed course, but have not yet received the degree the degree of M. D. 3 This number refers to total students in regular courses, as no degrees are conferred.

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1625

## IN REGULAR COURSES FOR DEGREES

COURSES					TOTAL IN REGULAR COURSES FOR DEGREES		UNCLASSIFIED STUDENTS OF COLLEGE GRADE		GRADUATES		No.
Ph. G.	B. S.	C. E.	OTHER DEGREES		Men	Women	Men	Women	Men	Women	
86	87	88	Men	Women	91	92	93	94	95	96	
.....	.....	.....	.....	.....	142	0	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	50	0	.....	.....	.....	.....	2
.....	.....	.....	.....	.....	456	0	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	96	0	.....	.....	9	.....	4
.....	.....	.....	.....	.....	26	0	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	770	0	.....	.....	9	.....	
.....	.....	.....	.....	.....	619	0	.....	.....	.....	.....	1
.....	.....	.....	.....	.....	616	0	.....	.....	17	.....	2
.....	.....	.....	.....	.....	148	0	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	198	32	.....	.....	446	46	4
.....	.....	.....	.....	.....	96	0	.....	.....	419	.....	5
.....	.....	.....	.....	.....	212	0	.....	.....	9	.....	6
.....	.....	.....	.....	.....	122	0	.....	.....	8	.....	7
.....	.....	.....	.....	.....	406	0	73	.....	40	.....	8
.....	.....	.....	.....	.....	0	36	.....	.....	.....	415	9
.....	.....	.....	.....	.....	0	74	.....	6	.....	.....	10
.....	.....	.....	.....	.....	247	0	.....	.....	80	.....	11
.....	.....	.....	.....	.....	72	13	.....	.....	412	42	12
.....	.....	.....	.....	.....	37	4	5	1	1	.....	13
.....	.....	.....	.....	.....	132	0	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	15
.....	.....	.....	.....	.....	40	0	9	.....	412	10	16
.....	.....	.....	.....	.....	.....	.....	.....	.....	396	?	17
.....	.....	.....	.....	.....	2,945	159	87	7	1,048	33	18
282	.....	.....	.....	.....	279	3	.....	.....	.....	.....	1
53	.....	.....	.....	.....	53	0	.....	.....	.....	.....	2
58	.....	.....	.....	.....	57	1	1	.....	.....	.....	3
393	.....	.....	.....	.....	389	4	1	.....	.....	.....	
.....	.....	.....	.....	.....	343	0	7	.....	1	.....	1
.....	.....	.....	.....	.....	362	0	24	.....	3	.....	2
.....	.....	.....	.....	.....	3158	0	2	.....	4	.....	3
.....	.....	.....	.....	.....	35	0	.....	.....	1	.....	4
.....	.....	.....	.....	.....	320	2	4	.....	4	.....	5
.....	.....	.....	.....	.....	.....	.....	15	.....	.....	.....	6
.....	.....	.....	.....	.....	344	0	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	332	2	52	.....	13	.....	
.....	2	162	.....	.....	164	0	10	.....	.....	.....	1
.....	.....	231	.....	.....	231	0	.....	.....	35	.....	2
.....	2	393	.....	.....	395	0	10	.....	35	.....	
.....	.....	.....	98	0	98	0	.....	.....	.....	.....	1
.....	.....	.....	?	?	?	?	?	.....	?	.....	2
.....	.....	.....	0	50	0	50	10	149	.....	.....	3
.....	.....	.....	?	?	?	?	?	?	?	.....	4
.....	.....	.....	98	50	98	50	10	149	?	?	
393	2	393	98	50	4,929	215	160	156	1,105	33	

of M. D. 2 Including 26 who have attended more than the prescribed course, but have not yet received  
 4 Residence not reported.



NUMBER, ETC.— Continued		RESIDENTS OF									
No.	GRAND TOTAL OF COLLEGE GRADE		NEW YORK		Me.	N. H.	Vt.	Mass.	R. I.	Ct.	Pa.
	Men	Women	Men	Women							
	97	98	99	100	101	102	103	104	105	106	107
1	142	.....	124	.....	.....	.....	.....	.....	.....	.....	.....
2	50	.....	40	.....	1	.....	4	.....	1	1	.....
3	456	.....	324	.....	.....	4	5	5	3	10	6
4	105	.....	75	.....	.....	.....	.....	1	1	1	4
5	26	.....	23	.....	.....	.....	.....	.....	.....	.....	2
	779	.....	586	.....	1	4	9	8	5	12	12
1	619	.....	355	.....	4	4	1	24	11	40	14
2	633	.....	354	.....	5	4	1	29	7	34	12
3	148	.....	132	.....	.....	2	2	9	.....	1	1
4	244	38	166	26	1	.....	.....	2	.....	1	13
5	115	.....	54	.....	.....	1	1	5	1	1	11
6	221	.....	152	.....	3	2	1	10	2	7	1
7	130	.....	76	.....	1	2	3	5	1	10	2
8	519	.....	184	.....	7	1	2	16	4	16	23
9	.....	51	0	30	.....	.....	.....	.....	.....	.....	.....
10	.....	80	0	32	2	2	1	7	2	4	2
11	327	.....	144	.....	.....	.....	3	5	1	14	1
12	84	15	56	12	2	.....	.....	1	.....	5	3
13	43	5	39	2	.....	.....	.....	2	.....	.....	1
14	132	.....	59	.....	.....	.....	.....	8	.....	6	15
15	8	.....	1	.....	.....	.....	.....	.....	.....	1	.....
16	412	10	252	?	3	7	.....	10	2	8	19
17	49	.....	43	.....	.....	.....	.....	.....	.....	4	.....
18	2396	?	283	?	10	3	2	6	.....	6	28
	4,080	199	1,950	102	38	28	17	139	31	158	146
1	279	3	184	3	.....	.....	.....	3	.....	8	5
2	53	.....	52	.....	.....	.....	.....	1	.....	.....	.....
3	58	1	49	1	.....	.....	.....	.....	.....	.....	2
	390	4	285	4	.....	.....	.....	4	.....	8	7
1	51	.....	32	.....	.....	.....	.....	.....	.....	.....	1
2	89	.....	29	.....	1	1	5	1	1	3	9
3	164	.....	71	.....	.....	2	4	3	.....	3	20
4	6	.....	6	.....	.....	.....	.....	.....	.....	.....	.....
5	28	2	10	.....	4	3	1	4	.....	3	3
6	15	.....	5	.....	1	1	.....	1	1	.....	1
7	44	.....	35	.....	?	?	?	?	?	?	?
	397	2	188	.....	6	7	10	9	2	9	34
1	174	.....	66	.....	.....	.....	1	2	.....	.....	25
2	266	.....	165	.....	.....	.....	.....	.....	2	5	2
	440	.....	231	.....	.....	.....	1	2	2	5	27
1	98	.....	87	.....	.....	.....	1	.....	.....	.....	.....
2	54	244	38	172	.....	.....	.....	.....	.....	4	3
3	10	199	6	166	.....	.....	.....	3	.....	4	.....
4	82	376	82	376	.....	.....	.....	.....	.....	.....	.....
	244	819	213	703	.....	.....	1	3	.....	8	3
	6,330	1,024	3,453	809	45	39	38	163	40	200	229

RESIDENTS OF											No.
N. J.	NORTH ATLANTIC STATES		Del.	Md.	D. C.	W. Va.	Va.	N. C.	S. C.	Ga.	
	Men	Women									
108	109	110	111	112	113	114	115	116	117	118	
14	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
45	78	.....	1	3	1	1	.....	2	.....	2	3
1	8	.....	.....	.....	2	.....	1	.....	.....	.....	4
.....	2	.....	.....	.....	1	.....	.....	.....	.....	.....	5
60	109	.....	1	3	4	1	1	2	.....	2	
68	166	.....	1	2	4	.....	8	3	1	3	1
32	124	.....	.....	2	1	7	7	12	3	7	2
1	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	14	3	.....	.....	.....	.....	.....	.....	.....	.....	4
10	30	.....	.....	.....	.....	1	.....	1	.....	.....	5
4	30	.....	2	2	.....	1	2	2	.....	.....	6
15	39	.....	.....	.....	1	1	.....	.....	.....	.....	7
34	103	.....	.....	1	1	4	4	10	2	9	8
5	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	9
14	.....	34	.....	.....	1	.....	.....	.....	.....	.....	10
37	61	.....	.....	.....	.....	.....	1	.....	.....	.....	11
4	14	1	.....	.....	.....	.....	.....	.....	.....	.....	12
.....	2	1	.....	.....	.....	.....	.....	1	.....	1	13
17	46	.....	.....	.....	.....	.....	1	.....	.....	.....	14
1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
2	251	?	1	.....	9	6	10	9	7	20	16
.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
10	69	1	.....	3	3	.....	9	7	2	8	18
254	772	45	4	10	19	20	42	45	15	48	
41	57	.....	.....	.....	1	.....	.....	.....	1	1	1
.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
41	60	.....	.....	.....	1	.....	.....	.....	1	1	
1	2	.....	.....	.....	.....	.....	.....	1	.....	.....	1
11	32	.....	1	2	.....	.....	.....	2	1	.....	2
12	44	.....	.....	.....	1	1	.....	1	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	4	1	.....	.....	.....	.....	.....	.....	.....	.....	6
?	?	?	?	?	?	?	?	?	?	?	7
24	100	1	1	2	1	1	?	4	1	.....	
3	31	.....	.....	4	1	.....	5	.....	2	1	1
28	37	.....	.....	.....	1	1	2	1	.....	.....	2
31	68	.....	.....	4	2	1	7	1	2	1	
8	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
63	12	58	.....	1	.....	.....	4	.....	4	2	2
36	4	39	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	4
107	25	97	.....	1	.....	.....	4	.....	5	2	
517	1,134	143	6	20	27	23	54	52	24	54	

No.	RESIDENTS OF										
	Fla.	SOUTH ATLANTIC STATES		Ala.	Miss.	La.	Tex.	I. T.	Ark.	Tenn.	Ky.
		Men	Women								
	119	120	121	122	123	124	125	126	127	128	129
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	10	.....	.....	.....	.....	3	.....	1	1	1
4	.....	3	.....	.....	.....	.....	2	.....	1	.....	1
5	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	14	.....	.....	.....	.....	5	.....	2	1	2
1	.....	22	.....	1	2	1	5	.....	2	2	.....
2	1	40	.....	2	.....	.....	5	.....	1	2	2
3	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	1
7	.....	1	.....	.....	.....	.....	1	.....	.....	1	1
8	3	34	.....	8	4	1	13	.....	2	7	13
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	1	.....	1	.....	2	1	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
16	3	265	?	12	10	6	27	.....	4	17	26
17	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
18	4	36	.....	5	5	1	14	.....	2	2	8
	11	213	1	30	21	12	68	.....	11	31	51
1	.....	3	.....	2	1	1	3	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	3	.....	2	1	1	3	.....	.....	.....	.....
1	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
2	.....	6	.....	1	.....	.....	2	.....	.....	1	.....
3	.....	3	.....	.....	.....	.....	.....	.....	.....	6	2
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	?	?	?	?	?	?	?	?	?	?	?
	.....	10	?	1	?	?	2	?	?	9	2
1	.....	13	.....	1	.....	2	1	.....	.....	1	6
2	.....	5	.....	2	.....	1	.....	.....	.....	.....	.....
	.....	18	.....	3	.....	3	1	.....	.....	1	6
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
2	3	4	10	.....	.....	.....	1	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
	3	4	11	.....	.....	.....	1	.....	.....	.....	1
	14	262	12	36	22	16	80	?	13	42	62

RESIDENTS OF												No.
SOUTH CENTRAL STATES		Ohio	Ind.	Ill.	Mich.	Wis.	Minn.	Ia.	Mo.	NORTH CENTRAL STATES		
Men	Women									Men	Women	
130	131	132	133	134	135	136	137	138	139	140	141	
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	1
6	.....	5	.....	5	.....	2	3	4	1	20	.....	2
4	.....	1	.....	2	2	1	.....	.....	.....	6	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
10	.....	6	1	7	2	3	3	4	1	27	.....	5
13	.....	10	1	6	1	6	2	.....	6	32	.....	1
12	.....	9	1	6	.....	4	1	1	.....	22	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
1	.....	1	.....	2	.....	1	1	.....	1	4	2	4
.....	.....	2	.....	2	.....	1	.....	1	2	8	.....	5
1	.....	3	1	3	3	.....	1	.....	.....	11	.....	6
3	.....	2	1	.....	.....	.....	2	.....	.....	5	.....	7
48	.....	15	10	10	5	4	2	11	12	69	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
.....	.....	2	.....	.....	.....	.....	1	.....	1	.....	4	10
4	.....	3	.....	.....	.....	.....	.....	1	.....	4	.....	11
.....	.....	1	.....	1	.....	.....	.....	.....	.....	2	.....	12
.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	2	13
1	.....	6	6	2	1	.....	3	.....	1	19	.....	14
1	.....	1	.....	.....	1	.....	.....	2	.....	4	.....	15
2102	.....	19	17	5	7	6	4	7	18	283	?	16
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
37	.....	21	14	12	11	5	11	12	11	90	7	18
224	.....	95	52	49	29	27	28	35	53	353	15	
7	.....	6	2	.....	.....	.....	1	3	2	14	.....	1
.....	.....	4	.....	.....	1	.....	.....	.....	1	6	.....	3
7	.....	10	2	.....	1	.....	1	3	3	20	.....	
2	.....	2	.....	.....	1	.....	.....	.....	.....	1	.....	1
4	.....	6	5	4	6	2	1	1	3	28	.....	2
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	1	1	.....	.....	.....	.....	.....	.....	2	.....	4
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	3	.....	5
?	?	?	?	?	?	?	?	?	?	?	?	6
14	?	12	6	4	9	2	3	1	4	41	?	7
11	.....	8	.....	5	.....	1	1	1	5	21	.....	1
3	.....	4	.....	3	.....	.....	1	1	2	11	.....	2
14	.....	12	.....	8	.....	1	2	2	7	32	.....	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
.....	1	.....	.....	.....	2	.....	.....	.....	.....	.....	2	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
1	1	.....	.....	.....	2	.....	.....	.....	.....	.....	2	4
270	1	135	61	68	43	33	37	45	68	473	17	



No.	RESIDENTS OF										
	Kan.	Neb.	S. D.	N. D.	Mont.	Wy.	Col.	N. M.	MOUNTAIN STATES		Ariz.
									Men	Women	
	142	143	144	145	146	147	148	149	150	151	152
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	1	.....	.....	.....	1	.....	.....	.....	2	.....	.....
3	3	.....	1	.....	.....	.....	2	.....	6	.....	.....
4	.....	1	.....	.....	.....	.....	1	.....	2	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	4	1	1	.....	1	.....	3	.....	10	.....	.....
1	1	.....	.....	.....	2	.....	2	.....	5	.....	.....
2	1	1	.....	.....	.....	.....	2	.....	4	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....
8	4	1	.....	.....	1	1	.....	.....	7	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	2	.....	.....	.....	.....	.....	2	.....	4	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	9	8	2	.....	1	.....	2	.....	22	?	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	5	3	.....	1	3	1	3	3	16	3	1
	22	13	2	2	7	2	12	3	60	3	1
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	1	3	.....	4	.....	.....
3	8	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	?	?	?	?	?	?	?	?	?	?	?
	3	?	?	?	?	1	3	?	7	?	?
1	2	3	1	.....	.....	.....	.....	.....	6	.....	.....
2	.....	1	.....	.....	2	.....	.....	.....	3	.....	.....
	2	4	1	.....	2	.....	.....	.....	9	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
	31	19	4	2	10	3	18	3	86	4	1

RESIDENTS OF											No.
U. T.	Nev.	Cal.	Or.	Id.	Wash.	Alas.	PACIFIC STATES		British America	Mexico	
							Men	Women			
153	154	155	156	157	158	159	160	161	162	163	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
1	1	3	.....	.....	2	.....	7	.....	1	1	2
.....	.....	.....	1	.....	.....	.....	1	.....	1	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
1	1	3	1	.....	2	.....	8	.....	2	1	5
.....	.....	2	2	.....	1	.....	5	.....	9	.....	1
3	.....	4	.....	.....	.....	.....	7	.....	26	1	2
.....	.....	.....	.....	.....	1	.....	1	.....	12	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
1	.....	1	.....	.....	1	.....	3	.....	4	1	5
1	.....	1	.....	.....	.....	.....	2	.....	3	.....	6
.....	.....	7	3	.....	1	.....	11	.....	35	.....	7
.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	9
2	.....	1	.....	.....	.....	.....	3	.....	6	1	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
.....	.....	1	.....	.....	.....	.....	1	.....	1	.....	13
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14
1	.....	9	3	.....	3	.....	216	?	31	1	15
.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	16
1	.....	13	3	.....	1	.....	16	3	33	.....	17
9	.....	40	11	.....	8	.....	65	4	163	4	18
.....	.....	1	.....	.....	.....	.....	1	.....	2	.....	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2
.....	.....	1	.....	.....	.....	.....	1	.....	3	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	1	.....	1	1	.....	6	.....	8	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	5
?	?	?	?	?	?	?	?	?	2	?	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	?	.....	7
3	?	1	?	1	1	?	6	?	13	?	
.....	.....	6	1	.....	.....	.....	7	.....	3	1	1
.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	2
.....	.....	6	1	1	.....	.....	8	.....	4	1	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1
.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	1	.....	.....	.....	.....	.....	1	2	.....	
13	1	52	13	2	11	?	88	5	187	6	

No.	RESIDENTS OF								LL. B.		
	Central America	West Indies	South America	Europe	Asia	Africa	Oceanica	FOREIGN		During year	Total from origin
								Men	Women		
	164	165	166	167	168	169	170	171	172	173	174
1	.....	.....	.....	1	3	.....	.....	4	.....	52	?
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	33	?
3	.....	.....	.....	2	1	.....	.....	5	.....	10	?
4	.....	.....	.....	2	2	.....	.....	5	.....	32	77
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	15
	.....	.....	.....	5	6	.....	.....	14	.....	142	92
1	8	1	.....	2	1	.....	.....	21	.....	.....	.....
2	3	.....	1	12	27	.....	.....	70	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	11	1	.....	.....
5	.....	.....	.....	2	.....	.....	.....	2	.....	.....	.....
6	.....	2	6	1	1	.....	.....	15	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....
8	5	8	1	10	.....	.....	4	63	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	6	1	.....	.....	.....	9	.....	.....
11	2	6	3	11	1	.....	.....	30	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	2	1	.....	2	.....	.....	.....	37	?	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
18	.....	1	.....	1	.....	.....	.....	35	.....	.....	.....
	20	19	11	47	31	....	4	289	10	.....	.....
1	.....	5	.....	.....	1	.....	.....	8	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
	.....	5	.....	.....	1	.....	.....	9	.....	.....	.....
1	.....	.....	.....	1	4	.....	.....	13	.....	.....	.....
2	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....
3	.....	.....	.....	5	.....	.....	.....	7	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
7	?	?	?	?	?	?	?	9	.....	.....	.....
	?	?	?	7	4	?	?	33	.....	.....	.....
1	1	3	11	.....	.....	.....	.....	19	.....	.....	.....
2	....	2	2	1	.....	.....	.....	6	.....	.....	.....
	1	5	13	1	.....	.....	.....	25	.....	.....	.....
1	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....
2	.....	1	.....	.....	.....	.....	.....	3	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	1	.....	.....	1	.....	.....	4	.....	.....	.....
	21	30	24	60	43	?	4	374	10	142	92

[illegible]



DEGREES CONFERRED ON EXAMINATION								
No.	C. E		ALL OTHERS			TOTAL DURING YEAR		Grand total from origin
	During year	Total from origin	DURING YEAR		Total from origin	Men	Women	
			Men	Women				
	184	185	186	187	188	189	190	191
1	.....	.....	.....	.....	.....	52	.....	?
2	.....	.....	.....	.....	.....	33	.....	?
3	.....	.....	.....	.....	.....	10	.....	?
4	.....	.....	.....	.....	.....	32	.....	77
5	.....	.....	.....	.....	.....	15	.....	15
	.....	.....	.....	.....	.....	142	.....	92
1	.....	.....	.....	.....	.....	179	.....	4,846
2	.....	.....	.....	.....	.....	159	.....	5,832
3	.....	.....	.....	.....	.....	37	.....	1,865
4	.....	.....	.....	.....	.....	46	6	?
5	.....	.....	.....	.....	.....	19	.....	783
6	.....	.....	.....	.....	.....	55	.....	1,190
7	.....	.....	.....	.....	.....	38	.....	1,163
8	.....	.....	.....	.....	.....	144	.....	3,921
9	.....	.....	.....	.....	.....	0	15	?
10	.....	.....	.....	.....	.....	0	20	?
11	.....	.....	.....	.....	.....	80	.....	695
12	.....	.....	.....	.....	.....	11	1	682
13	.....	.....	.....	.....	.....	12	1	182
14	.....	.....	.....	.....	.....	37	.....	348
15	.....	.....	.....	.....	.....	7	.....	68
16	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	15	.....	45
18	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	839	43	20,920
1	.....	.....	.....	.....	.....	90	1	1,328
2	.....	.....	.....	.....	.....	17	.....	111
3	.....	.....	.....	.....	.....	16	.....	44
	.....	.....	.....	.....	.....	123	1	1,483
1	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	3	.....	121	3	.....	121
3	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	3	.....	121	3	.....	121
1	18	?	11	.....	.....	19	.....	1,066
2	19	?	14	.....	?	33	.....	A
	37	?	15	.....	?	52	.....	1,066
1	.....	.....	A	A	A	A	A	A
2	.....	.....	.....	.....	.....	.....	.....	2.....
3	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....
	37	?	18	?	121	1,159	44	23,682

1 B. S. 2 Four honorary degrees including one doctor of music, one bachelor of music and two names given in summary. 4 Includes hospital appointments. 5 For names see summary. 6 Fellowships.

SCHOOL HONORS CONFERRED					TOTAL LECTURES AND EXERCISES OFFERED ALL CLASSES DURING YEAR							No.
3Appointments	5PRIZES		5SCHOLAR-SHIPS		SCIENCE							
	No.	Value	No.	Value	Physics	Chemistry	Qualitative analysis	Quantitive analysis	Microscopy	Botany	Other	
1923	193	194	195	196	197	198	199	200	201	202	203	
4	6	600	0	0	....	....	....	....	....	....	....	1
5	0	0	0	0	....	....	....	....	....	....	....	2
0	0	0	0	0	....	....	....	....	....	....	....	3
0	3	100	0	0	....	....	....	....	....	....	....	4
0	0	0	4	500	....	....	....	....	....	....	....	5
9	9	700	4	500	....	....	....	....	....	....	....	
0	8	1,850	0	0	27	84	....	....	....	....	....	1
47	6	375	61	6300	27	54	....	....	....	....	....	2
44	29	?	0	0	....	92	....	....	....	....	....	3
0	?	?	?	?	....	150	24	24	....	....	....	4
1	7	120	0	0	....	?	....	....	?	....	....	5
1	2	72	0	0	....	76	36	4	147	....	....	6
1	4	2200	0	0	....	....	....	....	....	....	....	7
46	?	?	?	?	10	38	....	....	....	....	....	8
1	4	?	0	0	....	96	....	....	?	....	....	9
0	0	0	0	0	....	160	100	25	....	....	....	10
1	3	106	0	0	40	120	....	....	16	....	80	11
1	0	0	0	0	....	70	....	....	....	....	....	12
0	2	?	0	0	....	....	100	49	....	17	....	13
1	6	122	0	0	....	160	....	....	....	....	....	14
0	0	0	0	0	....	....	....	....	....	....	....	15
0	0	0	0	0	....	....	....	....	....	....	....	16
0	0	0	0	0	20	100	50	44	220	....	....	17
0	0	0	0	0	....	....	....	....	....	....	....	18
24	51	2,845	1	300	124	1,200	310	146	183	17	80	
0	3	247	1	60	10	75	66	....	18	25	....	1
1	2	45	0	0	....	38	40	....	....	19	....	2
5	3	?	1	100	....	180	....	....	40	40	....	3
6	8	92	2	160	10	293	106	....	58	84	....	
0	0	0	0	0	....	....	....	....	....	....	....	1
0	4	290	0	0	....	....	....	....	....	....	....	2
0	1	125	62	61,200	....	....	....	....	....	....	....	3
?	?	?	?	?	....	....	....	....	....	....	....	4
0	0	0	0	0	....	....	....	....	....	....	....	5
0	0	0	0	0	....	....	....	....	....	....	....	6
7	0	0	0	0	?	?	?	?	?	?	?	7
7	5	415	2	1,200	?	?	?	?	?	?	?	
0	0	0	0	0	143	40	68	272	....	40	1,362	1
0	0	0	2	1,948	192	944	392	1,288	128	32	1,967	2
0	0	0	2	1,948	335	984	460	1,560	128	72	3,329	
0	0	0	75	71,500	....	....	....	....	....	....	....	1
0	2	125	1	1,000	?	?	?	?	?	?	?	2
0	0	0	0	0	?	?	?	?	?	?	?	3
0	0	0	0	0	?	?	?	?	?	?	?	4
0	2	125	6	2,500	?	?	?	?	?	?	?	
46	75	4,177	17	6,608	469	2,477	876	1,706	369	173	3,409	

masters of music conferred during the year.

3 Includes all honors conferred without money or prize.

7 Includes 4 fellowships, 1 lectureship.

TOTAL LECTURES AND EXERCISES												
No.	Philosophy	Social science and pedagogy	History	LANGUAGE AND LITERATURE			Inter-national	Constitutional	Criminal	Realty	Personal property	Contracts
				Greek	Hebrew	Other						
	204	205	206	207	208	209	210	211	212	213	214	215
1	.....	.....	.....	.....	.....	.....	6	60	25	86	30	74
2	.....	.....	.....	.....	.....	.....	0	0	16	27	10	66
3	.....	.....	.....	.....	.....	.....	2	2	20	164	2	150
4	.....	.....	.....	.....	.....	.....	31	104	133	102	2	67
5	.....	.....	.....	.....	.....	.....	.....	15	34	34	.....	84
.....	.....	.....	.....	.....	.....	.....	37	179	228	413	40	441
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	227	176	45	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	378	210	126	588	.....	.....	.....	.....	.....	.....
5	246	.....	.....	282	78	206	.....	.....	.....	.....	.....	.....
6	70	.....	.....	450	95	.....	.....	.....	.....	.....	.....	.....
7	?	?	?	?	?	?	.....	.....	.....	.....	.....	.....
.....	316	?	378	1,169	475	839	.....	.....	.....	.....	.....	.....
1	77	.....	.....	.....	.....	165	.....	.....	.....	.....	.....	6
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	77	.....	.....	.....	.....	165	.....	.....	.....	.....	.....	6
1	.....	432	192	.....	.....	.....	64	256	....	21	21	22
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	?	2,025	60	?	?	?	?	?	?	?	?	?
4	?	?	?	?	?	?	?	?	?	?	?	?
.....	?	2,457	252	?	?	?	64	256	?	21	21	22
.....	893	2,457	630	1,169	475	1,004	101	435	228	434	61	469





No.	TOTAL LECTURES AND											
	MEDICINE											
	Physiology	Hygiene	Public health	Materia medica	Pharmacy	Therapeutics	Pathology	Practice	Clinics	Surgery	Dentistry	Ophthalmology
	228	229	230	231	232	233	234	235	236	237	238	239
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	94	?	?	80	?	.....	90	.....	2500	84	?	20
2	81	.....	.....	71	.....	.....	22	59	381	71	.....	26
3	63	.....	.....	89	.....	.....	.....	125	59	97	.....	28
4	150	24	.....	50	24	100	48	150	?	150	.....	24
5	?	?	?	?	.....	?	?	?	?	?	?	?
6	186	.....	.....	68	.....	.....	.....	90	716	112	.....	22
7	69	6	.....	115	20	115	46	138	160	70	.....	23
8	61	26	25	211	.....	250	33	57	215	151	.....	215
9	96	48	.....	96	.....	.....	.....	96	60	48	.....	24
10	150	40	40	160	.....	120	120	150	480	160	.....	30
11	240	12	.....	.....	.....	80	80	160	.....	240	80	160
12	75	3	3	.....	15	45	26	64	52	40	.....	8
13	231	20	13	90	.....	99	66	198	297	165	.....	33
14	84	20	28	126	.....	.....	63	63	80	84	.....	40
15	.....	.....	.....	.....	.....	.....	.....	104	.....	.....	.....	122
16	.....	.....	.....	.....	.....	.....	250	307	?	.....	520	.....
17	60	25	.....	25	75	30	20	96	150	100	.....	40
18	.....	.....	.....	.....	24	896	24	96	?	1,350	.....	1,000
.....	1,590	203	89	1,020	158	1,535	888	1,849	3,044	1,722	600	1,610
1	13	.....	.....	25	50	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	19	39	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	40	160	.....	.....	.....	.....	.....	.....	.....
.....	13	.....	.....	84	249	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	20	20	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	20	20	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	?	?	?	?	?	?	?	?	?	?	?	?
4	?	?	?	?	?	?	?	?	?	?	?	?
.....	?	?	?	?	?	?	?	?	?	?	?	?
.....	1,608	223	109	1,104	407	1,535	888	1,849	3,044	1,722	600	1,610



No.	TOTAL LECTURES, ETC., <i>cont'd</i>				VALUE OF BUILDINGS				CLASS ROOMS IN ALL BUILDINGS	
	THEOLOGY, <i>continued</i>				Main	OTHER		Total	No.	No. of seats
	Pastoral theology	Ecclesiastical history	Other	All other		No.	Value			
	251	252	253	254	255	256	257	258	259	260
1	.....	.....	.....	.....	A	A	A	A	A	A
2	.....	.....	.....	.....	30,000	.....	.....	30,000	2	300
3	.....	.....	.....	.....	A	A	A	A	A	A
4	.....	.....	.....	.....	A	A	A	A	A	A
5	.....	.....	.....	.....	1	.....	.....	.....	?	?
.....	.....	.....	.....	.....	30,000	.....	.....	30,000	2	300
1	.....	.....	.....	.....	370,000	2	330,000	700,000	2	900
2	.....	.....	.....	.....	226,074	1	100,000	326,074	2	1,000
3	.....	.....	.....	.....	22,000	.....	.....	22,000	3	510
4	.....	.....	.....	.....	20,000	.....	.....	20,000	4	550
5	.....	.....	.....	.....	2718,000	.....	.....	.....	?	100
6	.....	.....	.....	.....	?	?	?	?	?	?
7	.....	.....	.....	.....	160,000	?	?	160,000	3	600
8	.....	.....	.....	.....	22	2	250,000	250,000	3	1,131
9	.....	.....	.....	.....	33	.....	.....	?	4	2150
10	.....	.....	.....	.....	35	.....	.....	?	?	?
11	.....	.....	.....	.....	?	.....	.....	.....	2	250
12	.....	.....	.....	.....	5,000	.....	.....	5,000	5	500
13	.....	.....	.....	.....	23,000	2	25,000	8,000	7	?
14	.....	.....	.....	.....	2730,000	.....	.....	?	2	282
15	.....	.....	.....	.....	2200,000	.....	.....	2200,000	?	?
16	.....	.....	.....	.....	64,000	.....	.....	64,000	8	300
17	.....	.....	.....	.....	10,000	.....	.....	10,000	5	225
18	.....	.....	.....	.....	20,000	.....	.....	20,000	9	280
.....	.....	.....	.....	.....	1,148,074	7	485,000	1,585,074	59	6,578
1	.....	.....	.....	.....	10,000	1	6,000	16,000	4	400
2	.....	.....	.....	.....	.....	.....	.....	.....	?	?
3	.....	.....	.....	.....	2	.....	.....	.....	?	?
.....	.....	.....	.....	.....	10,000	1	6,000	16,000	4	400
1	70	210	.....	.....	?	5	155,500	155,500	3	90
2	160	192	384	.....	.....	5	405,000	405,000	6	810
3	?	.....	.....	.....	?	.....	?	150,000	?	?
4	42	126	126	.....	8,000	.....	.....	8,000	1	20
5	42	191	271	.....	.....	2	25,000	25,000	5	500
6	16	.....	95	.....	22,000	2	12,000	34,000	2	60
7	?	?	?	.....	16,000	.....	.....	16,000	5	50
.....	330	719	876	.....	46,000	14	597,500	793,500	22	1,520
1	.....	.....	.....	2,390	231,000	4	266,000	297,000	14	365
2	.....	.....	.....	6,040	A	A	A	A	A	A
.....	.....	.....	.....	8,430	31,000	4	66,000	97,000	14	365
1	.....	.....	.....	.....	A	A	A	A	A	A
2	.....	.....	.....	.....	?	?	?	2125,000	14	757
3	?	?	?	?	.....	.....	.....	142,461	38	800
4	?	?	?	?	142,461	?	?	267,461	52	1,557
.....	?	?	?	?	142,461	?	?	267,461	52	1,557
.....	330	719	876	8,430	1,407,535	26	1,154,500	2,789,035	153	10,720

1 One large room in Buffalo library rented for \$150 per year. 2 Rented. 3 An adjunct of New York belongs to Albany Medical College. 6 Where institutions did not state whether pamphlets were bought

VALUE OF APPARATUS					LIBRARY						No.
Physical	Chemical	Biologic	Other	Total value	VOLUMES		6PAMPHLETS		Total additions	Total volumes now owned	
					Bought	Added by gift	Bought	Added by gift			
261	262	263	264	265	266	267	268	269	270	271	
A	A	A	A	A	A	A	A	A	A	A	1
A	A	A	A	A	A	8	A	A	8	1,093	2
A	A	A	A	A	A	A	A	A	A	A	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	8	.....	.....	8	1,093	5
<hr/>											
26,667	26,667	6,666	11,000	11,000	.....	.....	.....	.....	.....	.....	1
?	?	?	.....	?	.....	220	?	?	220	25,000	2
1,000	3,000	1,000	.....	5,000	50	.....	?	2100	150	3,000	3
.....	4300	.....	.....	.....	.....	5	.....	.....	5	2100	4
400	500	.....	?	2900	.....	.....	.....	.....	.....	.....	5
500	1,000	.....	.....	1,500	.....	100	.....	200	300	2,000	6
22,500	22,500	23,000	.....	23,000	.....	.....	.....	.....	.....	.....	7
.....	500	.....	1,500	2,000	.....	?	?	?	?	2500	8
.....	3,000	2,000	500	5,500	.....	21	287	.....	308	440	9
.....	350	.....	850	1,200	.....	.....	.....	.....	.....	.....	10
1,200	2,000	2,000	.....	5,200	40	20	?	2400	460	860	11
.....	200	.....	1,200	1,400	.....	.....	.....	.....	.....	21,000	12
.....	50	.....	.....	50	.....	220	.....	.....	220	2300	13
.....	.....	.....	100	100	.....	.....	?	2182	182	135	14
.....	1,000	1,000	.....	2,000	.....	.....	.....	.....	.....	.....	15
.....	2,000	1,500	500	4,000	.....	.....	.....	.....	.....	500	16
.....	.....	.....	6,000	6,000	.....	20	.....	.....	20	600	17
12,267	23,067	17,166	21,650	73,850	90	206	287	882	1,465	14,435	18
<hr/>											
800	4,500	.....	.....	5,300	2100	250	.....	100	2250	23,500	1
.....	.....	.....	.....	5	.....	5	.....	7	12	75	2
.....	962	.....	2,241	3,203	4	12	.....	20	36	17	3
800	5,462	.....	2,241	8,503	104	67	.....	127	298	3,592	
<hr/>											
.....	.....	.....	300	300	714	791	.....	90	1,595	18,819	1
.....	.....	.....	.....	.....	69	1,077	.....	285	1,431	20,242	2
.....	.....	.....	.....	.....	458	5,139	.....	391	5,988	60,337	3
.....	.....	.....	377	377	3	.....	.....	.....	.....	1,235	4
.....	.....	.....	200	200	.....	?	?	?	?	?	5
.....	.....	.....	.....	.....	.....	100	.....	10	110	2,160	6
.....	.....	.....	62	62	.....	20	.....	41	61	197	7
.....	.....	.....	939	939	1,241	7,127	?	817	9,185	102,930	
<hr/>											
5,000	2,000	.....	8,500	15,500	?	?	?	?	?	25,000	1
A	A	A	A	A	A	A	A	A	A	A	2
5,000	2,000	.....	8,500	15,500	?	?	?	?	?	5,000	
<hr/>											
A	A	A	A	A	A	A	A	A	A	A	1
.....	.....	.....	150	150	?	?	?	?	?	22,000	2
1,000	1,000	.....	.....	2,000	450	138	?	?	2588	2,171	3
?	?	?	?	8,000	?	?	?	?	?	2,550	4
1,000	1,000	?	150	10,150	450	138	?	?	588	6,721	
19,067	31,529	17,166	33,480	108,942	1,885	7,546	287	1,826	11,544	133,771	

Infirmary and has no separate property. 4 Belongs to faculty. 5 Almost the entire apparatus used or given they have been put under "added by gift."



No.	LIBRARY										
	Total pamphlets now owned	Total volumes and pamphlets in library	SERIALS			NO. OF HOURS OPEN DAILY				No. of readers at library	Volumes lent for home use
			Bought in past year	Given in past year	Total received	In term time	In vacation	On holidays	On Sundays		
	272	273	274	275	276	277	278	279	280	281	282
1	A	A	A	A	A	A	A	A	A	A	A
2		1,093				14	8	8			0
3	A	A	A	A	A	A	A	A	A		A
4	A	A	A	A	A	A	A	A	A		A
5											
		1,093									0
1											
2											
3	?	25,000	2	4	6	?	?	?	?	?	?
4	500	3,500	27	0	27	9	9			?	
5	?	?				?				?	0
6											
7	1,000	?	?	?	?	?	?	?	?	?	?
8											
9	2500	21,000				12	?			?	0
10	2,000	2,440	36		36	3				?	380
11											
12	8,400	9,260				8				?	0
13	?	21,000								?	0
14	2150	2450				?				?	0
15	21,500	1,635				?	?	?	?	?	0
16											
17	100	600				10				50	0
18	40	640				12	?	?		?	?
	14,190	25,525	65	4	69					50	380
1	2400	23,900	210	250	260	9	6			?	?
2	67	142	1	9	10	?					0
3	85	102		14	14	9	9			?	0
	552	4,144	11	73	84					?	?
1	4,937	23,756	14	3	17	6	6			?	?
2	17,120	37,362	6	31	37	8	8	8		?	0
3	47,931	108,268	?	?	?	8	?			?	2,757
4	365	1,600				2				?	?
5	?	?	?	?	?	?	?	?	?	?	?
6	110	2,210				?				?	0
7	98	295		9	9	3	6	6	3	?	?
	70,561	173,491	20	43	63					?	2,757
1	?	?	235	?	?	2				?	0
2	A	A	A	A	A	A	A	A	A	A	A
	?	?	35	?	?					?	0
1	A	A	A	A	A	A	A	A	A	A	A
2	?	?	?	?	?	2				30	175
3	2700	2,871	26	44	70	14	14	14	14	?	996
4	?	?	20		20	10				?	?
	700	2,871	46	44	90					30	1,171
	86,003	207,124	177	164	306					80	4,308

LIBRARY									No.
Amount of library funds	Annual income of funds	Gifts of money during year	PAID FOR						
			Books and pamphlets	Serials	Binding and repairs	Library salaries	All other expenses	Total ex- penditures	
283	284	285	286	287	288	289	290	291	
A	A	A	A	A	A	A	A	A	1
0	0								2
A	A	A	A	A	A	A	A	A	3
A		A	A	A	A	A	A	A	4
									5
0									
0	0								1
?	?	?	?	?	?	?	?	?	2
0	0								3
?	?	?	?	?	?	?	?	?	4
0	0								5
133	35			17 00	21 75			38 75	6
?	?	?	?	?	?	?	?	?	7
0	0								8
0	0								9
			70 21					70 21	10
									11
									12
133	35	?	70 21	17 00	21 75	?	?	108 96	13
0	0	1,100	607 20					607 20	14
0	0			5 00				5 00	15
0	0		?	?	?	12 00	?	225 00	16
0	0	1,100	607 20	5 00	?	12 00	?	637 20	17
18,381	21,000	410	960 58	173 98	51 65	145 00	23 01	1,354 22	18
6,000	360	1,000	294 10	?	?	?	?	?	19
60,000	3,500	2,000	1,593 76			1,935 00	459 04	3,987 80	20
0	0								21
?	?	?	?	?	?	?	?	?	22
									23
0	0								24
84,381	4,860	3,410	2,848 44	173 98	51 65	2,080 00	482 05	5,342 02	25
0	0		160 00	170 00	130 00	95 00	235 00	2590 00	26
A	A	A	A	A	A	A	A	A	27
0	0		160 00	170 00	130 00	95 00	35 00	590 00	28
A	A	A	A	A	A	A	A	A	29
?	?	?	?	?	?	?	?	?	30
0	0	1,500	631 47	106 23	14 95	392 50	36 00	1,161 15	31
0	0								32
?	?	1,500	631 47	106 23	14 95	392 50	36 00	1,161 15	33
84,514	4,895	6,010	4,317 32	472 21	218 35	2,579 50	553 05	7,839 33	34

No.	LIBRARY. <i>cont'd</i>		SUMMARY				
	Estimated value of gifts	Present total value	USED BY				
			GROUNDS		Buildings	Furniture	Apparatus
			Acres	Value			
	292	293	294	295	296	297	298
1	A	A	A	A	A	A	A
2	25	2,325	.....	.....	30,000	500	.....
3	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A
5	.....	.....	.....	.....	.....	.....	.....
	25	2,325	.....	.....	30,000	500	.....
1	.....	.....	?	250,000	700,000	.....	11,000
2	.....	.....	?	?	326,074	?	20,000
3	?	?10,000	? 2	15,000	22,000	?	?
4	?	5,000	? 4	55,000	20,000	4,000	5,000
5	?	?	.....	.....	.....	.....	.....
6	.....	.....	?	?	?	?	2900
7	?	?1,000	?	125,000	160,000	2,000	1,500
8	.....	.....	.1	30,000	50,000	3,000	8,000
9	?	?	.5	?	?	3,800	2,000
10	80	?1,500	.....	.....	?	300	5,500
11	.....	.....	.....	.....	.....	3,500	1,200
12	?	?	?	28,000	5,000	2,000	5,200
13	.....	?2,000	? 5	9,000	8,000	2,000	1,400
14	?	300	? 1	?	?	200	50
15	.....	1,570	?	?	200,000	50	100
16	.....	.....	.1	36,000	64,000	3,000	2,000
17	.....	?1,500	?	30,500	10,000	400	4,000
18	?	200	.1	40,000	20,000	10,000	6,000
	80	23,070	2.0	595,500	1,575,074	34,250	73,850
1	50	5,157	.1	60,000	16,000	3,000	5,300
2	11	116	.....	.....	.....	.....	.....
3	?25	?138	.....	.....	.....	410	3,203
	86	5,411	.1	60,000	16,000	3,410	8,503
1	?1,000	?35,000	10.	44,500	155,500	5,000	300
2	?	?	4.	500,000	405,000	7,000	.....
3	?	?	? 5	200,000	150,000	5,000	.....
4	.....	1,235	?	2,000	8,000	260	377
5	?	?4,300	?13.	10,000	25,000	500	200
6	51	2,551	60.	6,000	34,000	100	.....
7	?	?	.3	6,000	16,000	500	62
	1,051	43,086	87.8	768,500	793,500	18,360	939
1	?	11,960	.....	.....	?97,000	?2,500	?15,500
2	A	A	A	A	A	A	A
	?	11,960	.....	.....	97,000	2,500	15,500
1	A	A	A	A	A	A	A
2	?	?3,000	.....	.....	.....	.....	150
3	?	5,000	?	?	125,000	?12,000	?2,000
4	?	?	?	40,000	142,461	22,591	8,000
	?	8,000	?	40,000	267,461	34,591	10,150
	1,242	93,852	89.9	1,464,000	2,789,035	93,611	108,942

1 The college owns no real estate. The building is hired, and furniture, apparatus, library and museum are used in common for hospital and college.

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1645

OF PROPERTY							No.
SCHOOL			INVESTMENTS OWNED BY SCHOOL				
Library	Museum	Total	Real estate owned but not used by school	Real estate mortgages	Government securities	Corporation bonds and stocks	
299	300	301	302	303	304	305	
A	A	A	A	A	A	A	1
2,325	.....	32,825	.....	.....	.....	.....	2
A	A	A	A	A	A	A	3
A	A	A	A	A	A	A	4
.....	.....	.....	.....	.....	.....	.....	5
2,325	.....	32,825	.....	.....	.....	.....	
.....	.....	961,000	12,000	115,835	2,350	254,000	1
.....	?	2346,074	.....	.....	.....	.....	2
710,000	230,000	277,000	.....	5,000	.....	1,000	3
5,000	5,000	94,000	.....	.....	.....	.....	4
1.....	1.....	1.....	1.....	1.....	1.....	1.....	5
2?	2?	2?	2?	2?	2?	2?	6
1,000	.....	289,500	.....	.....	.....	.....	7
.....	7,000	98,000	.....	.....	.....	.....	8
?	?	25,800	.....	.....	.....	.....	9
1,500	.....	7,300	.....	.....	.....	.....	10
.....	.....	4,700	.....	.....	.....	.....	11
?	900	41,100	5,000	.....	.....	.....	12
2,000	?	22,400	.....	.....	.....	.....	13
300	10,000	10,550	30,000	.....	.....	.....	14
1,570	.....	2201,720	?	?	?	?	15
.....	.....	105,000	.....	.....	.....	.....	16
1,500	.....	46,400	.....	.....	.....	.....	17
200	1,000	77,200	.....	.....	.....	.....	18
23,070	53,900	2,387,744	47,000	120,835	2,350	255,000	
5,157	4,000	93,457	.....	.....	.....	.....	1
116	2200	2316	.....	.....	.....	.....	2
138	155	3,906	.....	.....	.....	.....	3
5,411	4,355	97,679	.....	.....	.....	.....	
35,000	1,000	241,300	33,568	444,647	.....	11,700	1
?	.....	912,000	?	485,537	.....	47,000	2
?	1,000	356,000	750,000	420,000	.....	220,000	3
1,235	.....	11,872	.....	350	.....	.....	4
24,300	.....	40,000	.....	112,006	.....	6,100	5
2,551	.....	42,651	.....	.....	.....	16,400	6
?	.....	222,562	.....	.....	.....	.....	7
43,086	2,000	1,626,385	783,568	1,462,540	.....	301,200	
211,960	28,200	2135,160	10,000	76,940	32,000	24,000	1
A	A	A	A	A	A	A	2
11,960	8,200	135,160	10,000	76,940	32,000	24,000	
A	A	A	A	A	A	A	1
23,000	.....	23,150	.....	.....	.....	.....	2
26,000	.....	219,000	.....	.....	.....	29,500	3
?	.....	2213,052	?	?	?	?	4
8,000	?	235,202	?	?	?	29,500	
93,852	68,455	4,514,995	840,568	1,660,315	34,350	609,700	

belong to members of the faculty. 2 No estimate can be given of college property proper, as buildings



SUMMARY OF PROPERTY — (Continued)							
No.	INVESTMENTS OWNED BY SCHOOL — (Continued)				Total school property	Debts at end of year	Net property
	Notes and accounts payable to school	Cash on hand or in bank	Other property	Total			
	306	307	308	309	310	311	312
1	A	A	A	A	A	A	A
2					32,825	10,500	22,325
3	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A
5		?		?	?		?
					32,825	10,500	22,325

1		7,633		391,818	1,352,818		1,352,818
2		200		200	346,274	89,300	256,974
3	?	1,888	?	77,888	784,888	12,000	772,888
4					94,000		94,000
5							
6	?	?	?	?	198,350	30,000	168,350
7		?		?	2289,500	?	2289,500
8					98,000	26,000	72,000
9					5,800		5,800
10					7,300	?	77,300
11		879		879	5,579		5,579
12	1,000	?	4,000	10,000	51,100	25,500	25,600
13	451	953		1,404	23,804	9,000	14,804
14				30,000	40,550	?	240,550
15	?	?	?	?	2201,720	?	?
16		25,000		5,000	110,000	40,000	70,000
17					46,400	13,750	32,650
18					77,200	51,000	26,200
	1,451	16,553	4,000	447,189	3,033,283	296,550	2,535,013

1		2,343		2,343	95,800	20,000	75,800
2		1,086		1,086	1,402	?	1,402
3	250			250	4,156		4,156
	250	3,429		3,679	101,358	20,000	81,358

1	34,819	1,598		526,334	767,634		767,634
2				532,537	1,444,537	15,000	1,429,537
3		6,000		721,000	1,077,000	?	1,077,000
4		944		1,294	13,166	600	12,566
5	11,441			129,547	169,547		169,547
6	3,800	6,357		26,557	69,208		69,208
7					222,562		222,562
	50,060	14,899		1,937,269	3,563,654	15,600	3,548,054

1	3,465	9,520		155,925	291,085	8,000	283,085
2	A	A	A	A	A	A	A
	3,465	9,520		155,925	291,085	8,000	283,085

1	A	A	A	A	A	A	A
2					23,150		23,150
3	526	2,667	52,306	285,000	104,000		104,000
4	?	?	?	?	2213,052	?	2213,052
	526	2,667	52,306	85,000	320,202	?	320,202
	55,752	47,068	56,306	2,629,062	7,342,407	350,650	6,790,037

FINANCIAL STATEMENT						No.
RECEIPTS DURING YEAR						
Tuition fees	Fees for professors	Room rent	Board	Other receipts from students	Income of investments	
313	314	315	316	317	318	
13,000 00	.....	.....	.....	.....	.....	1
5,550 00	.....	.....	.....	.....	.....	2
A	A	A	A	A	A	3
A	A	A	A	A	A	4
1,706 50	.....	.....	.....	.....	.....	5
20,256 50	.....	.....	.....	.....	.....	
3,238 50	58,993 00	150 00	.....	8,525 00	9,467 87	1
61,100 00	.....	.....	.....	.....	.....	2
10,415 28	? 500 00	.....	.....	.....	350 00	3
?	?	?	?	?	?	4
4,403 61	.....	.....	.....	.....	.....	5
? 17,412 00	?	.....	.....	2,540 00	.....	6
11,323 84	.....	.....	.....	.....	.....	7
14,230 00	44,815 00	70 00	.....	.....	.....	8
2,792 50	.....	.....	.....	.....	.....	9
6,350 00	.....	.....	.....	.....	.....	10
7,792 31	16,709 88	.....	.....	.....	.....	11
6,200 00	920 00	.....	.....	.....	?	12
2,858 25	.....	.....	.....	8 00	.....	13
8,790 00	?	.....	.....	.....	.....	14
300 00	.....	.....	.....	.....	.....	15
27,085 50	.....	.....	5,939 02	.....	.....	16
2,754 50	.....	.....	.....	.....	.....	17
25,962 00	.....	.....	.....	.....	.....	18
213,008 29	121,937 88	220 00	5,939 02	11,073 00	9,807 87	
17,221 99	.....	.....	.....	1,085 00	.....	1
1,400 00	.....	.....	.....	287 00	.....	2
3,270 00	.....	.....	.....	62 65	.....	3
21,891 99	.....	.....	.....	1,434 65	.....	
.....	.....	1,618 00	.....	.....	31,893 03	1
.....	.....	4,000 00	13,314 66	.....	15,036 39	2
.....	.....	.....	.....	4,000 00	55,000 00	3
.....	.....	.....	.....	.....	17 50	4
.....	.....	.....	.....	.....	6,989 39	5
688 00	.....	.....	.....	.....	1,402 21	6
.....	.....	.....	2,054 85	400 60	.....	7
688 00	.....	5,618 00	15,369 51	4,400 60	110,338 52	
32,997 00	.....	.....	.....	207 00	6,900 00	1
A	A	A	A	A	A	2
32,997 00	.....	.....	.....	207 00	6,900 00	
A	A	A	A	A	A	1
12,156 67	.....	.....	.....	.....	.....	2
6,256 60	.....	5,184 56	5,329 31	955 12	2,089 12	3
3,155 00	.....	.....	.....	.....	.....	4
21,568 27	.....	5,184 56	5,329 31	955 12	2,089 12	
310,410 05	121,937 88	11,022 56	26,637 84	18,070 37	129,135 51	

No.	FINANCIAL STATEMENT						
	RECEIPTS DURING YEAR			EXPENDITURES DURING YEAR			
	Gifts and bequests	All other sources	Total	ADDITIONS, IMPROVEMENT			
				Grounds	Buildings	Furniture	Apparatus
	319	320	321	322	323	324	325
1	.....	.....	13,000 00	.....	.....	.....	.....
2	.....	372 25	5,922 25	.....	37 20	.....	.....
3	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A
5	800 00	500 00	3,006 50	.....	.....	.....	.....
	800 00	872 25	21,928 75	.....	37 20	.....	.....
1	.....	3,573 72	83,938 09	288 68	813 92	.....	483 46
2	.....	.....	61,110 00	.....	1,150 81	785 96	.....
3	1,000 00	243 64	12,508 92	.....	1,528 72	?	?
4	?	?	18,500 00	?	?	?	?
5	.....	.....	4,403 61	.....	.....	.....	.....
6	.....	683 01	20,635 01	?	?	?	?
7	.....	5,338 40	16,662 24	500 00	.....	500 00	500 00
8	5,000 00	2,140 00	66,255 00	.....	21,408 73	250 00	.....
9	.....	.....	2,792 50	.....	1,000 00	.....	.....
10	?	?	26,350 00	.....	.....	.....	.....
11	.....	.....	24,502 19	.....	.....	.....	.....
12	400 00	700 00	8,220 00	120 00	560 00	300 00	200 00
13	100 00	2,322 70	5,288 95	250 00	1,102 09	88 21	523 87
14	.....	.....	8,790 00	.....	?	21,819 50	21,319 50
15	.....	.....	300 00	.....	.....	.....	.....
16	?	2,804 45	35,828 97	.....	.....	.....	.....
17	.....	978 00	3,732 50	.....	170 65	.....	375 07
18	.....	15,973 38	41,935 38	.....	4,906 93	435 35	.....
	6,500 00	34,757 30	421,753 36	958 68	12,641 85	3,679 02	3,401 90
1	.....	5,234 63	23,541 62	.....	.....	.....	.....
2	25 00	661 54	2,373 54	.....	.....	.....	.....
3	75 00	533 39	3,941 04	.....	.....	.....	438 36
	100 00	6,429 56	29,856 20	.....	.....	.....	438 36
1	320 00	.....	33,831 03	.....	2,233 25	410 64	.....
2	60,673 52	.....	93,024 57	?	?	?	?
3	.....	6,000 00	65,000 00	.....	1,000 00	1,000 00	.....
4	100 00	1,211 02	1,328 52	.....	.....	.....	.....
5	17,000 00	110 18	24,099 57	.....	.....	.....	.....
6	1,586 07	.....	2,988 28	.....	.....	.....	.....
7	2,460 56	1,576 50	7,180 51	.....	173 76	143 78	.....
	82,140 15	8,897 70	227,452 48	?	3,407 01	1,554 42	?
1	.....	.....	40,104 00	.....	2360 00	240 00	2350 00
2	A	A	A	A	A	A	A
	.....	.....	40,104 00	.....	360 00	40 00	350 00
1	A	A	A	A	A	A	A
2	.....	.....	12,156 67	.....	.....	.....	.....
3	27,050 00	11,667 45	58,542 16	.....	4,399 95	270 48	270 48
4	.....	24,995 78	28,150 78	.....	2,547 36	.....	100 00
	27,050 00	36,663 23	98,849 61	.....	6,947 31	270 48	370 48
	116,590 15	87,620 04	839,944 40	958 68	23,393 37	5,543 92	4,560 74

## FINANCIAL STATEMENT

## EXPENDITURES DURING YEAR

AND REPAIRS		Salaries for instruction	Fees to professors	Salaries paid other officers and employees	Prizes and scholarships	GIVEN OR LENT TO STUDENTS		No.
Library	Museum					No. of students	Amount	
326	327	328	329	330	331	332	333	
.....	.....	9,000 00	.....	.....	600 00	.....	.....	1
.....	.....	3,893 00	.....	391 62	.....	?	80 00	2
A	A	A	A	A	A	A	A	3
A	A	A	A	A	A	A	A	4
.....	.....	1,895 79	.....	.....	500 00	.....	.....	5
.....	.....	14,788 79	.....	391 62	1,100 00	?	80 00	
.....	.....	12,025 00	39,199 20	12,373 88	2,645 82	.....	.....	1
.....	.....	34,500 00	.....	3,719 16	350 00	.....	.....	2
?	?	4,326 00	750 00	999 92	.....	.....	.....	3
?	?	?	?	?	?	?	?	4
.....	.....	?	?	.....	35 00	.....	.....	5
?	?	214,792 70	?	1,312 50	.....	.....	.....	6
500 00	.....	1,000 00	.....	2,000 00	150 00	.....	.....	7
.....	.....	7,520 00	35,420 00	23,500 00	.....	?	375 00	8
.....	.....	358 00	.....	.....	.....	.....	.....	9
.....	.....	5,300 00	.....	1,100 00	.....	.....	.....	10
.....	.....	.....	16,709 88	3,550 00	106 00	.....	.....	11
?	.....	1,900 00	920 00	740 00	.....	.....	.....	12
.....	35 25	250 00	.....	452 00	.....	.....	.....	13
.....	.....	.....	.....	5,877 50	.....	.....	.....	14
.....	.....	.....	225 27	.....	122 50	.....	.....	15
.....	.....	.....	.....	8,493 72	.....	.....	.....	16
.....	.....	.....	.....	305 00	.....	.....	.....	17
.....	.....	.....	.....	10,907 00	.....	.....	.....	18
500 00	35 25	81,971 70	93,224 35	55,330 68	3,409 32	?	375 00	
?	.....	10,685 02	.....	.....	.....	.....	.....	1
5 00	.....	665 00	.....	120 00	45 00	.....	.....	2
.....	.....	1,078 20	.....	.....	138 00	.....	.....	3
321 00	.....	12,428 22	.....	120 00	183 00	.....	.....	
1,499 91	.....	18,000 00	.....	1,550 00	.....	43	7,910 00	1
?	?	?	?	?	?	?	?	2
2,000 00	.....	40,000 00	.....	8,000 00	7,000 00	.....	.....	3
.....	.....	560 00	.....	379 97	.....	.....	.....	4
.....	.....	5,600 00	.....	300 00	.....	?	935 00	5
.....	.....	2,135 00	.....	75 00	.....	?	75 00	6
.....	.....	3,480 82	.....	461 42	.....	3	169 00	7
3,499 91	?	69,775 82	?	10,766 39	7,000 00	46	9,089 00	
?	.....	27,677 00	.....	3,380 00	.....	.....	.....	1
A	A	A	A	A	A	A	A	2
590 00	.....	27,677 00	.....	3,380 00	.....	.....	.....	
A	A	A	A	A	A	A	A	1
.....	.....	25,102 58	?	4,581 79	1,456 00	.....	.....	2
1,626 69	.....	21,453 77	.....	3,129 21	1,225 61	?	526 80	3
573 93	.....	18,430 00	.....	1,664 52	.....	.....	.....	4
2,200 62	.....	44,986 35	?	9,375 52	2,681 61	?	526 80	
7,111 53	35 25	251,627 88	93,224 35	79,364 21	14,373 93	46	16,070 80	



FINANCIAL STATEMENT— <i>Continued</i>						
EXPENDITURES DURING YEAR— <i>Continued</i>						
No.	Fuel and lights	Insurance	Interest on debt	Other incidentals	All other purposes	Total
	334	335	336	337	338	339
1	.....	.....	.....	.....	3,400 00	13,000 00
2	180 93	68 40	530 00	573 10	168 00	5,922 25
3	A	A	A	A	A	A
4	A	A	A	A	A	A
5	.....	.....	.....	.....	610 71	3,006 50
	180 93	68 40	530 00	573 10	4,178 71	21,928 75
1	4,000 00	.....	.....	3,876 89	4,076 17	79,873 02
2	1,586 71	.....	4,994 12	14,023 24	.....	61,110 00
3	441 80	159 02	840 00	2,497 52	1,000 00	12,542 98
4	?	?	?	?	?	17,500 00
5	?	?	?	?	?	4,403 61
6	494 15	?	?	?	21,200 00	17,799 35
7	450 00	500 00	3,000 00	.....	5,687 57	14,787 57
8	1,000 00	.....	1,300 00	9,681 27	5,800 00	66,255 00
9	.....	.....	.....	.....	1,571 00	2,929 00
10	350 00	.....	.....	?	?	26,750 00
11	79 29	.....	.....	906 52	2,271 50	23,623 19
12	300 00	50 00	1,400 00	1,200 00	1,530 00	8,220 00
13	164 80	85 00	520 00	1,064 06	.....	4,335 28
14	.....	.....	.....	151 00	.....	8,790 00
15	.....	.....	.....	74 73	.....	300 00
16	1,730 13	150 00	.....	.....	.....	10,373 85
17	311 82	.....	637 50	229 00	269 78	2,298 82
18	3,200 00	.....	3,156 00	.....	.....	22,605 28
	14,108 70	944 02	15,847 62	33,704 23	23,406 02	364,496 95
1	1,348 66	276 13	900 00	.....	10,000 64	23,526 45
2	13 64	.....	.....	37 32	401 36	1,287 32
3	.....	.....	.....	80 06	1,955 94	3,690 56
	1,362 30	276 13	900 00	117 38	12,357 94	28,504 33
1	1,379 20	100 00	.....	1,076 48	684 00	34,843 48
2	?	?	?	?	?	?
3	3,000 00	.....	.....	?	9,000 00	71,000 00
4	201 38	60 00	60 00	31 11	.....	1,292 46
5	200 00	.....	.....	810 32	.....	7,845 32
6	.....	.....	.....	.....	.....	2,285 00
7	207 75	.....	719 00	105 11	1,600 25	7,060 89
	4,983 33	160 00	779 00	2,023 02	11,284 25	124,327 15
1	1,137 00	.....	.....	.....	2,526 47	36,060 47
2	A	A	A	A	A	A
	1,137 00	.....	.....	.....	2,526 47	36,060 47
1	A	A	A	A	A	A
2	93 72	32 17	.....	.....	.....	11,266 26
3	2,132 49	.....	.....	1,719 39	19,120 13	55,875 00
4	.....	.....	.....	.....	5,881 47	29,197 28
	2,226 21	32 17	?	1,719 39	26,001 60	96,338 54
	24,003 47	1,480 72	18,056 62	38,137 12	78,754 99	671,656 19

# STATISTICS OF SCHOOLS OF LAW, MEDICINE, PHARMACY, ETC. 1651

## ESTIMATED EXPENSES OF STUDENTS

Annual tuition fees	TABLE BOARD		RENT OF FURNISHED ROOM		All other expenses	Total average expenses	No.
	No. of weeks	Average cost for year	No. of weeks	Average cost for year			
<b>340</b>	<b>341</b>	<b>342</b>	<b>343</b>	<b>344</b>	<b>345</b>	<b>346</b>	<b>LAW</b>
100	35	150 to 400	35	70 to 350	?	320 to 1050	1 U. O. N. Y. 1
100 to 125	36	108 to 180	36	54 to 108	10 to 25	272 to 438	2 Albany 2
155	33	165 to 231	33	99 to 165	25	744 to 7576	3 Columbia 3
?	35	117	35	64	145	7400	4 Cornell 4
100	32	96 to 128	32	32 to 64	20 to 40	248 to 332	5 Niagara 5
.....	.....	.....	.....	.....	.....	.....	
<b>200</b>	<b>35</b>	<b>125 to 140</b>	<b>35</b>	<b>105</b>	<b>15</b>	<b>445 to 460</b>	<b>MEDICINE</b>
145	34	102 to 170	34	51 to 85	25 to 50	?	1 P. and S. 1
75 to 130	25	75 to 125	25	37 to 75	?	?	2 U. C. N. Y. 2
55 to 105	34	102 to 170	34	34 to ?	?	?	3 Albany 3
75	?	?	?	?	?	?	4 Buffalo 4
140	35	?105	35	?70	20 to 30	345 to 400	5 N. Y. Vet. 5
105	.....	.....	.....	.....	.....	105	6 L. I. Hosp. 6
75 to 205	?	?	?	?	?	178 to 450	7 Homeop. 7
75 to 95	26	?104 to ?130	26	?78 to ?100	?50 to ?75	?307 to ?400	8 Bellevue 8
80 to 120	32	96 to 160	32	80 to 120	25 to 50	281 to 450	9 N. Y. Wo. 9
105 to 150	52	?156 to ?208	52	?156 to ?208	110 to 150	?600 to 700	10 Wom. In. 10
105 to 150	26	78 to 130	26	78 to 130	40 to 100	255 to 458	11 N. Y. Den. 11
85 to 105	36	108 to 288	36	75 to 100	15 to 30	178 to 243	12 Eclectic 12
115	24	84 to 96	24	48 to 72	15 to 20	147 to 198	13 Syracuse 13
50	25	75 to 100	25	25 to 50	50 to 100	200 to 300	14 Am. Vet. 14
850	52	208	?	156	200	914	15 N. Y. Oph. 15
100 to 110	.....	.....	.....	.....	30 to 50	130 to 160	16 Polyclinic 16
69	.....	.....	.....	.....	.....	69	17 Niagara 17
.....	.....	.....	.....	.....	.....	.....	18 Post Grad. 18
<b>50 to 60</b>	<b>25</b>	<b>100 to 125</b>	<b>25</b>	<b>25 to 65</b>	<b>15 to 30</b>	<b>200 to 280</b>	<b>PHARMACY</b>
55	22	66 to 100	22	22 to 50	15 to 25	153 to 230	1 C. N. Y. 1
56	24	84	24	36	24	200	2 Albany 2
.....	.....	.....	.....	.....	.....	.....	3 Buffalo 3
<b>0</b>	<b>32</b>	<b>90 to 125</b>	<b>35</b>	<b>25 to 40</b>	<b>25 to ?</b>	<b>140 to ?250</b>	<b>THEOLOGY</b>
0	33	175	33	50	?	?225	1 Auburn 1
?	34	125 to 136	?	?	?	225 to 250	2 Gen. P. E. 2
20 to 25	?	42 to 48	.....	.....	15 to 20	77 to 93	3 Union 3
0	38	95 to 114	38	19 to 38	30 to 48	144 to 200	4 Ger. Luth. 4
0	34	66	.....	.....	10	76	5 Canton 5
32	40	80	.....	.....	25	137 to 150	6 C. B. I. 6
.....	.....	.....	.....	.....	.....	.....	7 Wagner 7
<b>200</b>	<b>40</b>	<b>200 to 300</b>	<b>40</b>	<b>120 to 160</b>	<b>40 to 60</b>	<b>560 to 720</b>	<b>POLYTECH.</b>
200	33	128 to 198	33	99 to 165	?	?427 to 563	1 Rensselt'r 1
.....	.....	.....	.....	.....	.....	.....	2 C. C. Mine 2
<b>155</b>	<b>33</b>	<b>128 to 198</b>	<b>33</b>	<b>99 to 165</b>	<b>?</b>	<b>?382 to 518</b>	<b>SPECIAL</b>
?	?	?	?	?	?	?	1 C. O. Pol. 1
80 to 60	34	208	34	108	?20	396	2 Cons. Mus. 2
0	40	72 to 96	40	48 to 64	3 to 5	123 to 165	3 Teachers 3
.....	.....	.....	.....	.....	.....	.....	4 S. N. O. 4
.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	

## TABLE

## STUDENTS PURSUING COURSES FOR DEGREES IN COLLEGES

[EXPLANATORY NOTES — 1 No detailed statistics of the residence of students pursuing graduate courses  
courses for degrees in professional

RESIDENTS OF	B. A.		B. S.		PH. D.		B. L.	
	Men	Women	Men	Women	Men	Women	Men	Women
Maine .....	2	2	...	...	...	...	...	...
New Hampshire .....	2	2	...	...	...	...	1	...
Vermont .....	6	6	1	1	1	...	...	...
Massachusetts .....	35	13	9	...	3	5	3	...
Rhode Island .....	10	5	...	...	...	...	1	...
Connecticut .....	44	11	2	...	2	...	1	...
Pennsylvania .....	102	20	22	2	14	16	2	3
New York .....	1,933	537	643	72	98	61	86	26
New Jersey .....	84	26	29	...	4	1	1	2
Delaware .....	1	...	1	...	1	...	1	...
Maryland .....	2	...	3	...	...	...	2	...
District of Columbia .....	3	3	4	1	1	1	1	...
West Virginia .....	5	3	1	...	5	2	...	...
Virginia .....	1	1	1	...	...	...	...	...
North Carolina .....	2	1	...	...	...	...	...	1
South Carolina .....	5	1	...	...	...	...	4	...
Georgia .....	...	1	1	...	...	...	...	...
Florida .....	1	...	...	...	1	...	...	...
Alabama .....	1	...	...	...	...	...	...	...
Mississippi .....	1	2	...	...	...	...	...	...
Louisiana .....	1	...	1	...	...	...	1	...
Texas .....	2	1	...	...	...	...	1	...
Indian Territory .....	1	...	...	...	...	...	...	...
Arkansas .....	...	...	...	...	...	...	...	...
Tennessee .....	4	3	...	1	...	...	...	...
Kentucky .....	4	4	...	...	1	...	...	...
Ohio .....	37	24	6	1	7	1	9	1
Indiana .....	2	2	1	1	1	1	2	...
Illinois .....	24	19	2	1	3	...	1	1
Michigan .....	14	11	4	...	1	...	1	...
Wisconsin .....	8	9	4	...	...	...	1	...
Minnesota .....	21	2	1	...	3	...	...	...
Iowa .....	7	1	...	...	...	...	...	...
Missouri .....	2	4	3	...	1	...	...	...
Kansas .....	3	...	1	...	1	...	1	...
Nebraska .....	3	2	1	...	...	...	...	...
South Dakota .....	3	1	1	...	1	...	...	...
North Dakota .....	...	...	...	...	...	...	...	...
Montana .....	...	...	...	...	...	...	...	...
Wyoming .....	...	...	...	...	...	...	...	...
Colorado .....	1	...	1	...	1	...	...	...
New Mexico .....	...	...	...	...	...	...	...	...
Arizona .....	1	...	...	...	...	...	...	...
Utah .....	2	...	...	...	...	...	...	...
Nevada .....	...	...	...	...	1	...	...	...
California .....	...	8	...	...	...	...	...	...
Oregon .....	...	...	...	...	...	...	...	...
Idaho .....	2	...	...	...	...	...	...	...
Washington .....	...	...	...	...	...	...	...	...
Alaska .....	...	...	...	...	...	...	...	...
British America .....	4	2	3	...	...	...	...	...
Mexico .....	...	...	1	...	...	...	...	...
Central America .....	4	...	7	...	...	...	...	...
West Indies .....	...	...	...	...	...	...	...	...
Europe .....	16	2	6	...	...	...	...	...
Asia .....	8	3	2	...	...	1	1	...
Africa .....	...	...	...	...	...	...	...	...
South America .....	...	...	2	...	...	...	...	...
Oceanica .....	...	...	...	...	...	...	...	...
Total .....	2,414	732	764	80	151	89	121	34

<sup>1</sup> No women reported

## OF ARTS AND SCIENCE, POLYTECHNIC AND SPECIAL SCHOOLS

were reported. 2 For information concerning residents of the following states and countries pursuing schools, see table 3.]

B. E.		C. E.	M. E.	B. P.		B. MUS.		B. AB.		TOTAL	
Men	Women	Men	Men	Men	Women	Men	Women	Men	Women	Men	Women
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	3	2
.....	.....	1	4	.....	.....	.....	.....	.....	.....	8	2
.....	.....	1	8	1	1	.....	.....	.....	.....	13	8
.....	.....	6	13	.....	.....	.....	.....	.....	.....	69	18
.....	.....	3	4	.....	.....	.....	.....	.....	.....	18	5
.....	.....	4	7	.....	.....	.....	.....	.....	.....	60	11
1	1	38	34	.....	1	.....	8	2	.....	215	46
8	7	264	213	6	52	21	100	7	.....	3,279	855
1	2	28	21	.....	.....	1	.....	.....	.....	169	31
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	5	.....
.....	.....	4	4	.....	.....	.....	.....	.....	.....	15	.....
.....	.....	4	6	.....	.....	.....	.....	.....	.....	19	5
2	2	1	2	.....	.....	.....	.....	.....	.....	16	7
.....	.....	9	2	.....	.....	.....	.....	.....	.....	13	1
.....	.....	1	1	.....	.....	.....	.....	.....	.....	4	2
.....	.....	3	2	.....	.....	.....	.....	.....	.....	14	1
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	4	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
.....	.....	3	1	.....	.....	.....	.....	.....	.....	7	.....
.....	.....	1	2	.....	.....	.....	.....	.....	.....	6	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	5	5
.....	.....	7	.....	.....	.....	.....	.....	.....	.....	12	4
.....	.....	15	35	.....	.....	.....	.....	.....	.....	109	27
.....	.....	1	5	.....	.....	.....	3	.....	.....	12	7
.....	.....	13	23	.....	.....	.....	1	.....	.....	66	22
.....	.....	1	5	.....	.....	.....	.....	.....	.....	26	11
.....	.....	1	7	.....	1	.....	1	.....	.....	21	11
.....	.....	3	.....	.....	.....	.....	.....	.....	.....	28	2
.....	.....	3	3	.....	.....	.....	.....	.....	.....	13	1
.....	.....	10	1	.....	.....	.....	.....	.....	.....	17	4
.....	.....	3	1	.....	.....	.....	.....	.....	.....	10	.....
.....	.....	4	.....	.....	.....	.....	1	.....	.....	8	3
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	7	1
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....
.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1	3	.....	.....	.....	.....	.....	.....	7	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
.....	.....	7	1	.....	.....	.....	.....	.....	.....	1	.....
.....	.....	1	2	.....	.....	.....	.....	.....	.....	8	8
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	3	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	6	12	.....	.....	.....	1	.....	.....	25	3
.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
.....	.....	3	1	.....	.....	.....	.....	.....	.....	15	.....
.....	.....	8	1	.....	.....	.....	.....	.....	.....	9	.....
.....	.....	1	2	.....	.....	.....	1	.....	.....	25	3
.....	.....	1	.....	.....	1	.....	.....	.....	.....	12	5
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	13	2	.....	.....	.....	.....	1	.....	18	.....
.....	.....	1	1	.....	.....	.....	.....	.....	.....	2	.....
12	12	486	426	7	56	22	111	11	1	4,414	1,115

for these courses.













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